

# AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

## Special Features This Month

### Building Plans

House and Bungalow Designs

Practical Family Ice Houses

Modern City School Building

### Practical Carpentry

Saw-Tooth Roof Construction

Storm Proof Screened Porch

Craft for the Home Workshop

### Modern Methods

Hot Water System of Heating

Reinforced Concrete Floors

How to Equip a Carpenter Shop

# ROENIUS

## WOOD and COAL

# CHUTES

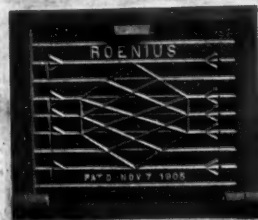


CLOSED AND LOCKED

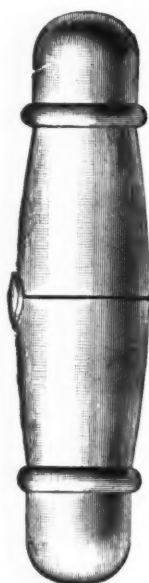
**10,000  
in use**

Have stood the test, because they are of good, common sense construction. They **do the work and stand the abuse** Coal Chutes are intended for. No adjustable parts, easily opened, easily locked. Notice long anchorage and long spout on both Chutes. Write for agency and prices.

**Grand Rapids Foundry Co.**  
Grand Rapids, Wisconsin



CLOSED AND LOCKED



## Here is a Gimlet

Equal in quality and usefulness to any Brace Bit

HANDLE OF  
SELECTED  
COCOBOLO  
WOOD

**THREE SIZES ONLY**  
**Cutting 4-32, 6-32, and 8-32 Holes**

**Price Postpaid 15 cents each**

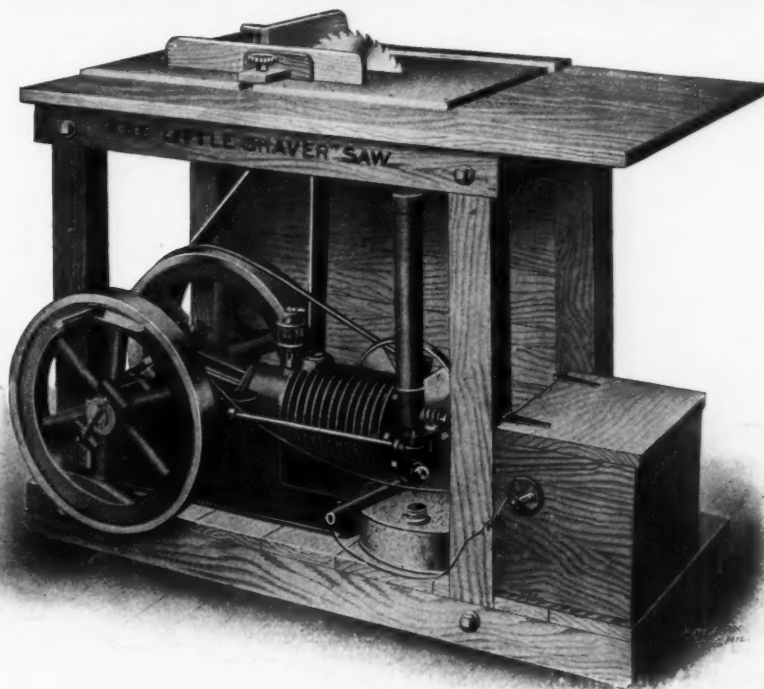
**H. H. MAYHEW COMPANY**  
SHELBURNE FALLS, MASS.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# These "LITTLE SHAVERS" TO YOU AT FACTORY PRICES

OUR Saw outfit has made as big a hit with the trade, as our floor scraper. This outfit will save you much money, time and labor, and make you independent. We are putting the first fifty out at factory cost, to get them started. You need this outfit NOW.



WE are also going to sell 500 floor scrapers at FACTORY PRICES the next few months, and it will pay you to get in touch with us.

The LITTLE SHAVER is the simplest, strongest and best floor scraper on the market. These two time and money savers will pay for themselves in a few weeks and we want your inquiries to SHOW YOU.




---

WRITE US TODAY.

---

**Inter-State Equipment and Engineering Company,  
OLD COLONY BLDG., CHICAGO, ILL.**



## The American Floor Surfacing Machine

Does the Work of 20 Men

**BETTER**

**QUICKER**

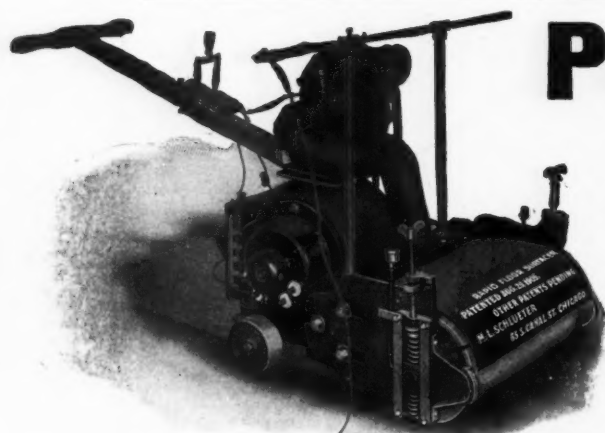
**CHEAPER**

*The only machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior wood work.*

It has surfaced and polished millions of square feet on every kind of floors, from common pine to the finest parquet, from bowling alleys to sky scrapers. It is self-propelling, no pushing or pulling, no blades to dull or sharpen. Used and indorsed by leading contractors everywhere. Big money in floor surfacing as a business, one machine earned over \$1850.00 in seven weeks. Guaranteed and sold on its merits.

Write for our New Booklet. "Surfacing Floors as a business"

**The American Floor Surfacing Machine Company**  
TOLEDO, OHIO



## Perfect Results

Are Easily Obtained by using

# SCHLUETER RAPID FLOOR SURFACER

The machine is built on the only correct principle. It is guaranteed to be **THE BEST** machine with which to produce an even, smooth surface on any kind of wood floor, old or new, hard or soft, and in all buildings; Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc. **THE SCHLUETER** will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner.

### Profits for Contractors

Type "B" Machine 18x8 in. Roller  
Type "D" Machine 16x7 in. Roller

The contractor using a **Schlueter Rapid Floor Surfacers** and advertising the fact that he is prepared to do perfect work will soon have all the work he can do. We can prove to any contractor that the Schlueter machine will easily earn a net profit from \$10 to \$25.00 a day when in operation.

### Sand Paper the Only Perfect Way

The **SCHLUETER RAPID FLOOR SURFACER** is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of **600 revolutions a minute**. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine will surface from one to two thousand square feet in eight hours. Cost of sandpaper and electric power from \$1.00 to \$2.00 per day.

### What One Contractor Says

TO WHOM IT MAY CONCERN:

Dear Sir: We have used your rapid floor surfacing machine at the Harbach Apartment Houses, this city. We consider it to be a labor-saving device of high order. We believe there is no comparison between work done by the machine and hand work, the sander giving a smooth, uniform surface, much preferable to that usually obtained by hand work. Yours very truly,

CHARLES WEITZ' SONS.

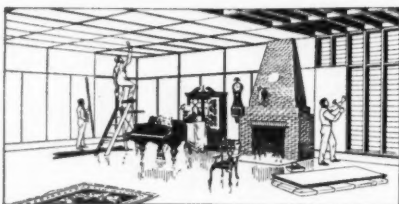
**FREE** Illustrated booklet containing full information sent free to contractors. **M.L. SCHLUETER** 28 S. Canal St. CHICAGO

Eastern Agents:—New York & New Jersey Floor Laying & Surfacing Co., Lawyers Bldg., 164 Market St., Newark, N. J.



Patented in U. S. and Canada. Last U. S. patent allowed Sept. 25, 1907

Edge Roller Attachment Interchangeable to either side of machine. Works close to baseboard.



*Beaver Boards*

### The Modern Wall and Ceiling Material Takes Place of Both Lath and Plaster

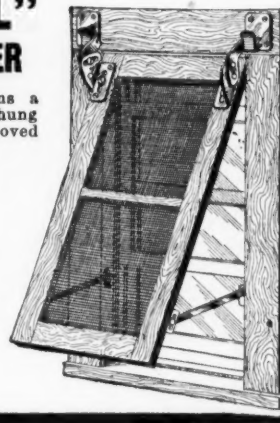
The carpenter nails it direct to the studding. It is then painted. No waiting for plaster to dry. Susceptible to finest decoration. "Determining Facts in Wall Building and Decoration" tells about the six kinds. A copy and sample free. Write today.

**The Beaver Mfg. Co., 247 Perry St., Buffalo, N. Y.**

### The "UNIVERSAL" ADJUSTABLE HANGER

can be used anywhere. It forms a perfect, practicable lock; sash hung with it cannot be opened or removed from the outside; it cannot be blown open by storms; makes practicable the only substitute for the half-sash sliding screen: is sold in sets, half sets, or in any other way the trade demands; indestructible; will wear out a dozen screens. Ask your hardware dealer or write for free sample and catalog.

**THE ADJUSTABLE HANGER CO.**  
415 Huron St., Toledo, Ohio, U. S. A.



The Weber Automatic Sharpening Device

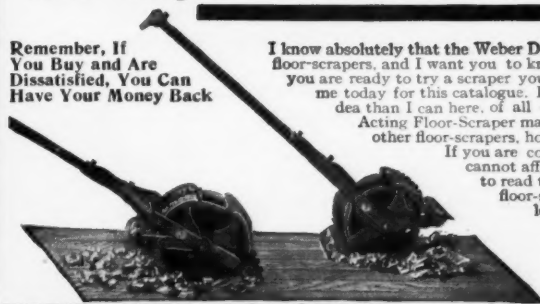


The Weber Automatic Sharpening Device shown above is the most perfect floor-scraper sharpener on the market and can be used without removing the blades from the machine. Requires no skill to keep its blades in perfect order. Anyone can sharpen a blade quicker and better than can an expert by the old way. It can also be used on any other floor scraper and cabinet scraper with satisfactory results.

**J. F. WEBER, Pres., WEBER MFG. CO., 670 Seventy-First Ave., West Allis, Wis.**

## I Wish You Knew All That I Know About the Weber Double Acting Floor Scraper. Let Me Send You My Catalogue—IT IS FREE

Remember, If You Buy and Are Dissatisfied, You Can Have Your Money Back



I know absolutely that the Weber Double Acting Floor-Scraper is better than other floor-scrapers, and I want you to know it too. The only way I can show you, until you are ready to try a scraper yourself, is by my catalogue. I want you to write me today for this catalogue. Handsomely illustrated, it will give you a better idea than I can here, of all the different uses to which the Weber Double Acting Floor-Scraper may be put; it will tell you why it is better than other floor-scrapers, how it is made better and how it does better work. If you are considering the purchase of a floor-scraper you cannot afford either in first cost or operating costs, not to read this catalogue. It will tell you some facts about floor-scrapers which you don't know. Address your letter to me personally.

Reference by permission  
FIRST NATIONAL BANK  
West Allis, Wisconsin

## COMPLETE OUTFIT PRICE \$15.00 HAND AND FOOT-POWER MACHINERY

Our No. 7 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

Send for Catalogue.

**W.F. & Jno. Barnes Co.**

74 Ruby St.

ROCKFORD, ILL.



## OUR NEW STEEL SQUARE

Aside from excellence of material and workmanship, the greatest difference between the best Carpenter's Steel Square and the old iron square of the blacksmith, consists of the scales and markings on the improved tool. Our square, as recently improved, enables the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before known.

Our Steel Square Book, describing the new tool, is a veritable PRACTICAL TREATISE ON THE STEEL SQUARE and we will send a copy, without charge, to anyone who in writing us will mention the American Carpenter and Builder.

**SARGENT & COMPANY**

1149 Leonard Street

NEW YORK

## FOOT, HAND AND POWER

# Wood-Working Machinery

For Carpenters, Builders, Cabinet-Makers, and Other Wood-Workers

BUILT FOR HARD WORK, ACCURATE WORK AND LONG SERVICE

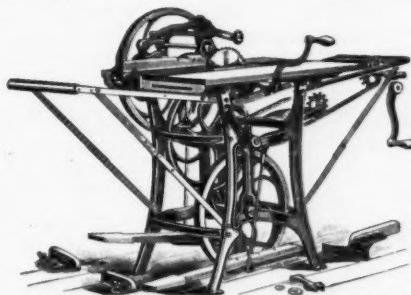


"Victor" Scroll Saw "Diamond" Mortiser

ONE MAN with one of these machines will do the work of four to six men using hand tools; will do it easier, will do it better.



No. 8 "Union" Power Saw



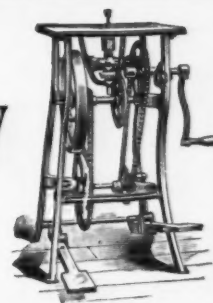
"Union" Combination Self-Feed-Rip and Cross-Cut Saw

Enterprising mechanics are quick to see the superior merits of our machines. It will pay you to investigate these advantages.

SEND FOR CATALOG "A"

**The Seneca Falls Manufacturing Co.**

218 Water Street, Seneca Falls, N. Y., U. S. A.



"Rex" Moulder

WE GUARANTEE each machine to be thoroughly practical and accurate. Machines sent on trial, and if not found entirely satisfactory, may be returned at our expense.

(96)



No. 6 "Union" Combination Saw

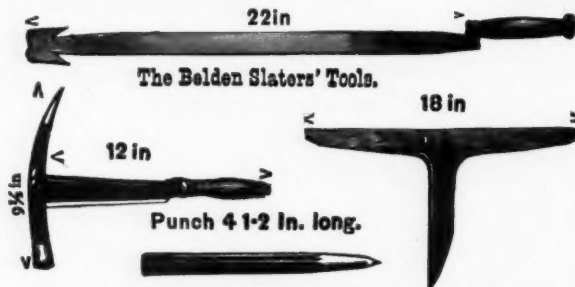


## TOOLS FOR SLATERS MANUFACTURED BY BELDEN ARE GUARANTEED

Their superiority over others is acknowledged by thousands of users. Made-to-order steel used in their manufacture adopted only after most careful experimenting gives them their value.

ONE HAMMER  
ONE RIPPER  
ONE STAKE  
ONE PUNCH  
Constitute a Set

If Your Dealer Cannot Supply You, Write Us Direct

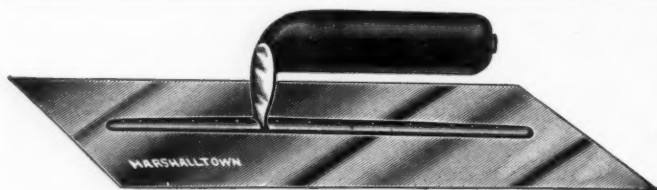


OUR HAMMERS are perfectly balanced and are provided with

Leather Handles to prevent hand from slipping

Our Tools Bear an International Reputation

THE BELDEN MCH. CO., Whalley Ave. and Tryon St. NEW HAVEN, CONN., U. S. A.



The Marshalltown Plastering Trowel

## The Best 3 Made

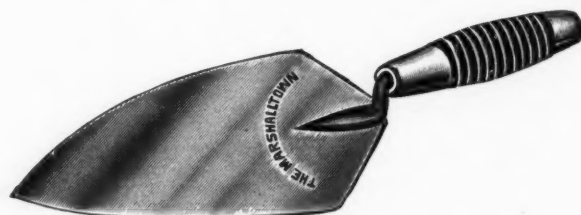
EVERY TROWEL GUARANTEED

No Mistake in Insisting on  
**MARSHALLTOWN**

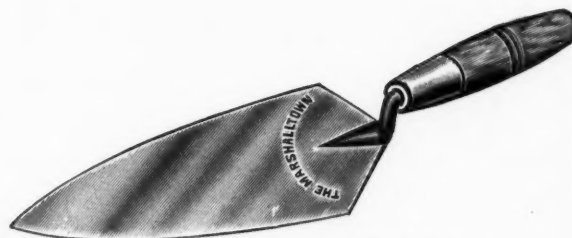
We manufacture a full line of **High Grade Plasterers' Tools**, and it would be well for every plasterer, bricklayer and contractor to have one of our catalogues.

**Marshalltown Trowel Co.**

Marshalltown, Iowa, U. S. A.



The Marshalltown Wide Heel Leather Handle Brick Trowel



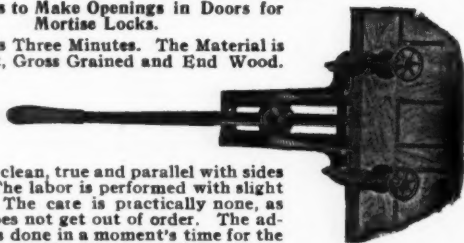
The Marshalltown Philadelphia Pattern Brick Trowel

## Miller's Hand Mortiser

WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for Mortise Locks.

The time is Three Minutes. The Material is Hard, Soft, Gross Grained and End Wood.



The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from 1/4 inch to 1 1/4 inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO. Cincinnati, O.

## LUFKIN STEEL TAPES and RULES

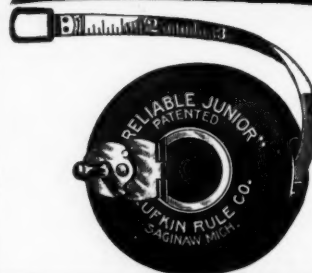
ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY

The Lufkin Rule Co.

Saginaw, Mich., U. S. A.  
New York London

For Sale Everywhere.  
Send for Catalogue.





## *The* **ACME FLOOR SCRAPING OUTFIT**

### IT IS NOT A QUESTION OF PRICE

but a question of efficiency that establishes the value of a machine. **BARGAIN SALES** or **CUT PRICES** are never associated with an article of merit. When investing your money in a **FLOOR SCRAPER** do not be guided by price, look for **RESULTS**, that's what counts. Cheapness is no recommendation. **INVESTIGATE, COMPARE, TRY**, then **JUDGE FOR YOURSELF**. It costs you nothing to try the **ACME MACHINES**, they will be sent to you upon request. If not satisfactory return them at my expense.

*Illustrated booklet mailed upon request*

**JOS. MIOTKE**

**247 Lake St.**

**Milwaukee, U. S. A.**

This outfit will be sent on trial to any responsible party.

## NO QUESTION ABOUT IT

### IT'S THE BEST **ACKERMANN'S RAPID FLOOR SCRAPER**

**Is Guaranteed to do More, Better and Easier Work than any other on the market.**

#### Knife Advantages

By means of a simple eccentric device, the knife blades of the "Rapid" can be **instantly** moved or set at any angle, thus securing a "**drawing out**." No floor scraper can be a success that does not bring the knife blade across the floor surface with a natural, **hand-like** movement. The "**Rapid**" does this perfectly. Any size blade up to 4½x8 inches can be used on this machine.

#### Exclusive Knife Sharpening Feature

By simply reversing the position of the machine (turning it over) it forms its own knife sharpening vise, the blade being brought into a perfect upright position, ready to sharpen, **without removing** it from the machine. This saves time, and time is money. The operator proceeds to sharpen the knife, then turns the machine over and goes ahead with his work.

#### Our Special Guarantee Offer

We will ship a **Rapid Floor Scraper**, charges prepaid, subject to use **FREE** for three days, by any responsible person. If you are then satisfied the machine is all we claim for it you can purchase it, if not we will have the machine returned at our expense. Further; if, after you purchase this machine, you find that, at any time under equal conditions it will **not** do "**More**," "**Better**" and "**Easier**" work in a given number of hours than any other floor scraper, will return your money and you can keep the machine free of cost. This is a straight offer, without any strings to it, made to anyone desiring to secure the best floor scraper made without risking their money until **THEY KNOW** what they are buying. We refer to the **State Bank of Michigan**, Grand Rapids, Mich., as to our guarantee and responsibility.

**J. B. ACKERMANN CO.**

Sole Manufacturers

Board of Trade Building


GRAND RAPIDS, MICH.



Cut Showing Machine in Reverse Position Ready to Sharpen the Knife-Blade



This Brush is an **Exclusive Patented Feature**. **NO OTHER MACHINE HAS OR CAN USE IT.**  
Patent Allowed Nov. 1907



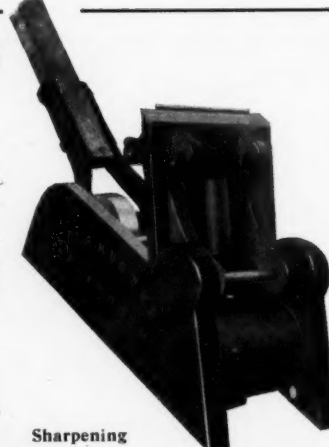
**FREE TRIAL**

## COMMON SENSE Floor Scraper

The Common Sense Floor Scraper gives satisfaction where others have failed. Remember, if this scraper does not do better work than can be done by hand or by other scrapers, return it to me at my expense and you will be under no obligations to me whatever. Give it a trial and be your own judge. It's built right, works right, and price is right.

*Write for Descriptive Circular and Price*

Manufactured and Sold by  
**J. A. KUSTER - Plymouth, Wis.**  
 AGENTS WANTED IN EVERY STATE



Operating Sharpening

**When you think of Floor Scrapers—Think of the FOX FLOOR SCRAPER**

**It Will Save You Money**

We Send the Fox Floor Scraper on Three Days' Trial—Write for Proposition



**WRITE US BEFORE BUYING**

Don't make hard work of Floor Scraping



Buy a **FOX FLOOR SCRAPER**

**The Simplest and Best Device for Perfect Floor Scraping.**

**Money Pays Dividends**



REGISTERED

The handiest wood scraping device on the market. Body of tool slides on the floor, insuring a uniform cut, blade is held by a clamp and can be adjusted or reversed in a second's time. Unexcelled for any kind of wood scraping. Never jumps or leaves waves. Every carpenter needs this tool. Price of Fox Cabinet Scraper, \$1.25.

*Ask your dealer to order it for you, or we will ship on receipt of price.*

**FOX MFG. CO., 187 Second St., MILWAUKEE, WIS.**

## "FORSTNER" BRACE AND MACHINE BITS

**FOR FINE CARPENTER, CABINET AND PATTERN WORK**



**Specially Adapted for Hardwood Working**

The Forstner Labor-Saving Auger Bit, unlike other bits, is guided by its Circular Rim instead of its centre; consequently it will bore any are of a circle and can be guided in any direction regardless of grain or knots, leaving a true polished surface. It is preferable and more expeditious than chisel, gouge, scroll saw, or lathe tool combined, for core boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding and mortising, etc.

Manufactured by  
**THE PROGRESSIVE MFG. CO., Torrington, Conn.**

Enquire of your Hardware Dealers or write us direct.

Supplied in sets.

Write for Catalogue.

To thoroughly introduce this high grade tool among carpenters, pattern makers and others, we will mail to any reader of the American Carpenter and Builder upon receipt of 50 cents any bit we make from one-quarter inch to one inch in size.

**"Last a Lifetime and give Satisfaction to the End"**



The Celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other make for keen, hard, smooth cutting edges. If your hardware dealer does not handle

**The Celebrated Barton Tools,** send direct for Catalog. Be sure and specify "CARPENTER'S CATALOG"

**MACK & CO., 20 Brown's Race, Rochester, N. Y.**

TRADE MARK



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# Before Buying a Floor Scraper DO THIS:—Let Us Send You THE "LITTLE GIANT"

Your  
Success  
Means Our  
Success

Prepaid, Absolutely **FREE** of Any Expense  
to You Whatever

**15,000**

**"Little Giants"**

Now in Use

Testify to its Utility

You try it on your own floor and if not satisfactory in every way, ship it back at our expense. When you have proven for yourself that the "LITTLE GIANT" is all we claim:—

The best floor scraper on earth from every standpoint, write us and we will make you satisfactory terms for its purchase.

Write Now Today  
For Free Catalog

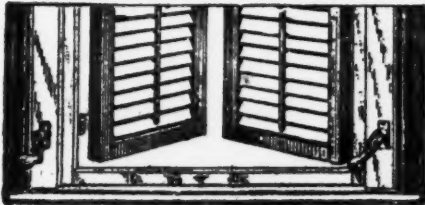
**HURLEY MACHINE CO.**

GENERAL OFFICE AND WORKS

155 South Jefferson St., CHICAGO

BRANCHES:—New York, San Francisco and Toronto, Can.

## MALLORY'S



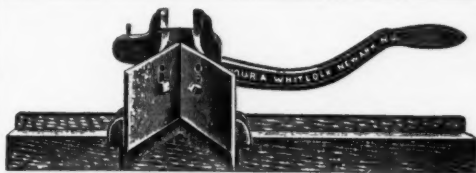
Standard  
Shutter  
Worker

New and improved patterns and designs.

Opens and closes the blinds without raising the window. Automatically locks the blinds in any position desired. Made of gray and malleable iron. The best and most durable blind hinge. Incomparable for strength, durability and power. Can be applied to old or new houses of brick, stone or frame. Send for illustrated Circular. If your hardware dealer does not keep them send direct to

MALLORY MANUFACTURING CO.  
204 Flemington National Bank Building, FLEMINGTON, N. J.

## The S. & W. MITRE



Hand or  
Foot  
Power

24, 3  
and  
4 inch  
Saws

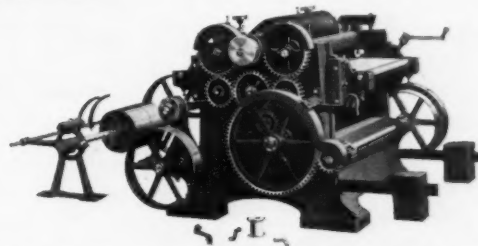
GUARANTEED ABSOLUTELY ACCURATE  
Write us for particulars

**SEYMOUR & WHITLOCK**  
1 GARDEN ST., NEWARK, N. J.

SEND FOR 1908 CATALOG OF

## CRESCENT WOOD-WORKING MACHINERY

The book contains a lot of valuable information that the intending buyer of machinery should have before selecting equipment. There are five new machines in the Crescent line. Catalog tells all about them.

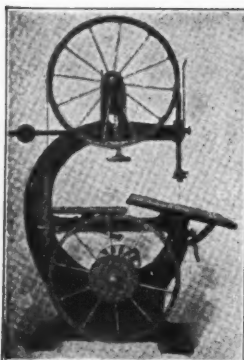


BAND SAWS, JOINTERS, SAW TABLES,  
SHAPERS, SWING SAWS, DISK GRINDER,  
BORING MACHINE, PLANER AND  
: : : MATCHER : : :

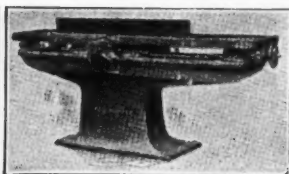
26-inch Planer illustrated and described on pages  
54 and 55 of 1908 catalog.

**The Crescent Machine Co.**

224 MAIN ST., LEETONIA, OHIO



Right Prices  
Prompt Shipments



## COMPLETE WOOD-WORKING SHOPS

For CARPENTERS and CONTRACTORS

These Four Machines  
with a Gasoline Engine or  
Motor make a Model Shop



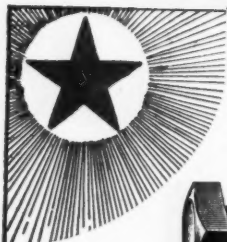
You can save time and money by being in a position to manufacture your own millwork.

We also carry a LARGE STOCK OF UP-TO-DATE, BUT SLIGHTLY USED MACHINES. We can surprise you with the small investment it requires to be independent. Write us today for full information

### CHICAGO MACHINERY EXCHANGE (INC.)

Woodworking Machinery Merchants

9 to 10 North Canal St., CHICAGO



## EXPANSION BOLTS



FOR Quick, Labor-Saving Fastenings that HOLD in Brick, Stone and Masonry. Drill hole, place STAR SHIELD within, then put lag screw thro' material to be attached and into STAR SHIELDS and fasten tight. A positive inside lateral expansion insures a fastening PERMANENTLY DEPENDABLE. Catalog, Samples and Prices upon request.

STAR EXPANSION BOLT CO. BAYONNE N. J.



You Will Sell More Window-Screens If You Hang Them With

## GOSSETT HINGES

No experiment. Eight years of growing sales prove them the best. Find out for yourself.

Write for Free Samples Today

F. D. KEES MFG. CO.  
Box 523  
BEATRICE - NEBRASKA

## PLATE GLASS

### Bath Room Fixtures

FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT BUILDINGS

Absolutely sanitary, require no cleaning, never wear out or show the effects of use. Not affected by hot or cold water. The modern 20th century toilet and lavatory fittings.

### PLATE GLASS TOWEL BAR



Price \$1.50

No. 141 24 inches, adjustable. Also made in 30, 36, 42 and 48 inch lengths at slightly higher prices.

Round glass towel bars, \$2.00

Adjustable glass towel shelves, \$3.50, \$4.00, \$6.00

We also sell plate glass with polished edges for table tops, any size, and glass push plates for use in fine residences and apartments, manufacture and re-silver mirrors, etc.

CATALOGUE SENT FREE ON APPLICATION

### Geo. H. Anderson & Co.

Manufacturers and Jobbers of Plate Glass Specialties  
281-291 W. Superior Street - - CHICAGO

## CUSTOM MADE FLY SCREENS

Our work is far superior to the usual output of local mills and has a style and finish not obtainable from those who do not make a specialty of screens.

For outside screens we use the identical finish of the outside of Pullman cars.

The best grades of Wire Cloth, enameled, galvanized, genuine bronze, etc. Fastened by tacks or by the "lock-strip" process.

Intending purchasers may have free by mail samples of woods, finishes, and wire cloth and copy of catalog and price list. Agencies in many cities. Special terms to contractors and builders.

The A. J. PHILLIPS CO.  
FENTON, MICH.

23 Years' Experience

3 1/2 Acres of Floors

## On the Square



every builder should have my little works and be a constant reader of the "Cement World," the leading paper of its kind published.



STEEL SQUARE POCKET BOOK.....\$ .50  
FOLDER (in case with pockets)......25  
DESIGNING (finely illustrated)......50  
CEMENT WORLD ..... 1.00

All for \$1.75.

\$2.25

DWIGHT L. STODDARD, Author of "Steel Square Pocket Book," 328 W. Raymond St., Indianapolis, Ind.

Send for other Combination Offers.

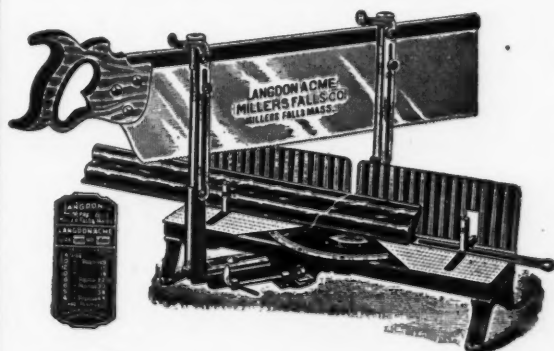
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The Largest Saw Manufacturing Plant in  
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of the Principle Upon Which the High  
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Utility has been built.

**HENRY DISSTON & SONS, Inc. PHILADELPHIA, PA.**



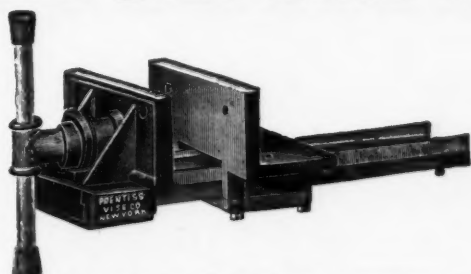
### **Are You Interested in Mitre Boxes ?**

If you are it will pay you to investigate the Langdon Acme. It has all the advantages of any other box made and several that others do not comprise. Our pocket catalogue "D," representing our full line of tools, will be sent if asked for.

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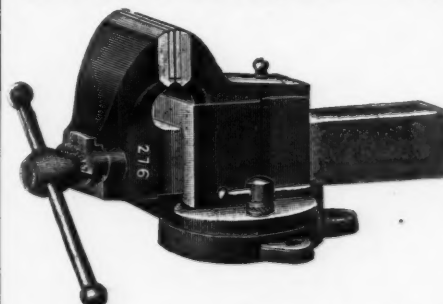
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For Cabinet Makers and Wood Workers. Simplest—Strongest  
—Cheapest—Best  
Send for Catalogue of all kinds of Vises  
PRENTISS VISE COMPANY, MAKERS  
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MADE  
ESPECIALLY  
FOR WOOD  
WORKERS

FOR SALE BY  
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SEND FOR  
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MERIDEN, CONN.



## LATEST IMPROVED ALL IRON SWING CUT-OFF SAW



alone of its kind

Properly  
Counter-  
Balanced

Adjustable  
Hanger

With Six Inch Adjustment

CAN BE HUNG  
ANYWHERE

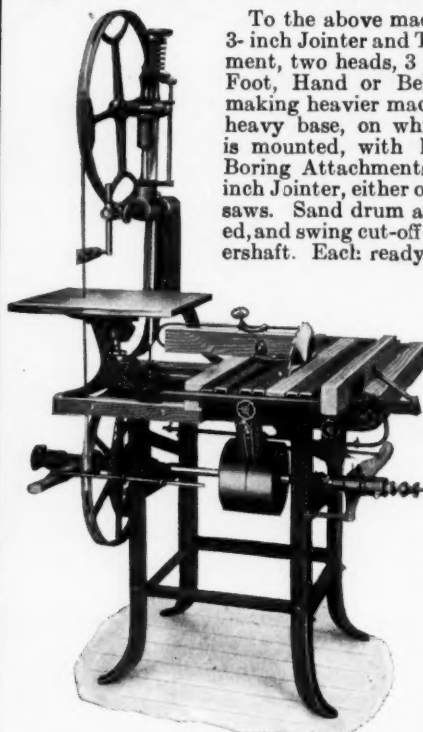
On the Floor  
Under the Floor  
On the Wall

With same ease of operation

Write for FREE Catalog  
of our complete line.

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## Rip Saw, Band Saw and Boring Machine



To the above machine we can add 3-inch Jointer and Tenoning Attachment, two heads, 3 inches wide. For Foot, Hand or Belt Power. Also making heavier machines with long, heavy base, on which countershaft is mounted, with light and heavy Boring Attachments, 3-inch and 6-inch Jointer, either of three size band saws. Sand drum and disk combined, and swing cut-off saw from countershaft. Each ready for use without

change, driven from same countershaft with friction clutches if preferred.

Special Attention given to getting a number of machines in small space all driven with one belt direct from engine or line shaft.

If you don't believe it, write us.

Catalogue and Special Price List FREE.

PARKS **B**all **B**earing **M**achine Co.

FERGUS & C. H. & D., Cincinnati, O.



TRADE MARK

## SAMSON SPOT SASH CORD



Be sure that the cord you buy has SAMSON AND THE LION on the label, and that the braid is marked with the COLORED SPOT. You may be sure you'll get the best.

WE'RE GLAD TO SEND SAMPLES AND FULL INFORMATION.

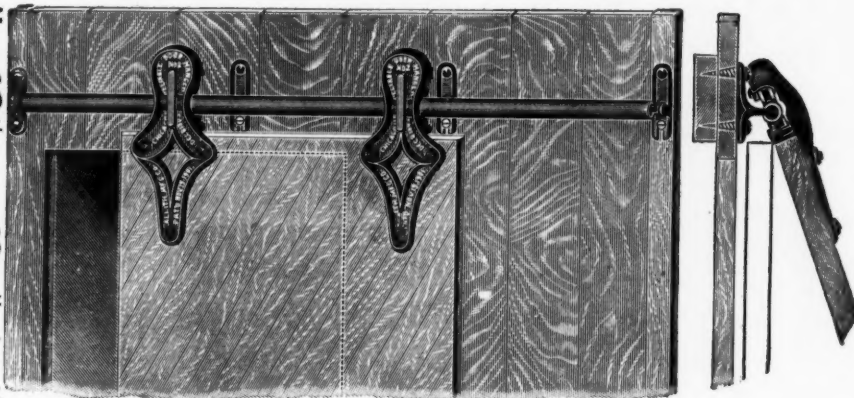
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## RELIABLE ROUND TRACK DOOR HANGERS

Impossible to Derail  
Easy Running, Great Strength

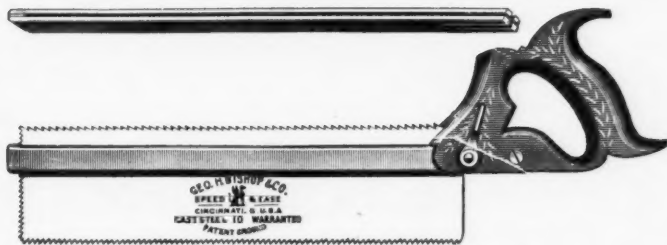
FOR  
BARN, WAREHOUSE and FIRE DOORS  
Send for Catalog "A"

ALLITH MANUFACTURING CO.  
CHICAGO, ILL.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

## Geo. H. Bishop & Co. Patent Back Saw



Patented July 12th, 1898, and January 9th, 1906.

### No. 10. Patent Back Dovetailing, Rip, Cross Cut and Depth Cutting Saw

The back of this saw constitutes a slot, through which the blade slides, enabling the workman to move, space and adjust it any desired width or distance from edge of back, permitting him to cut with precision and exactness any desired depth, thus saving all the additional labor and time otherwise necessary to measure and mark each separate piece of material.

The blade can be easily and quickly slid in position and suitably adjusted by reversing the thumb lever that fastens the back into the handle and firmly holds the blade in proper place. When the lever is reversed the back and blade can be removed from the handle together, and the blade adjusted by sliding it up or down the embracing back the required distance, then replace in the handle and tighten with the lever.

The blades are made of spring steel, hand filed and set ready for use. Extra blades of any points or style of tooth furnished.

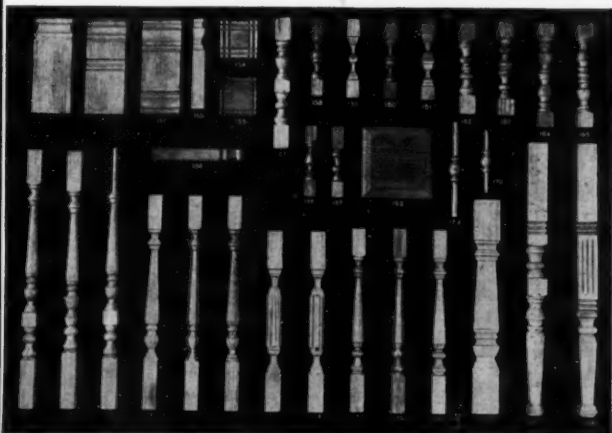
The handle is of applewood, handsomely carved and finely finished, nickel trimming.

This saw is one of intrinsic merit, recommended by every intelligent mechanic and skilled laborer. Simple and quick to adjust, easy and varied to use.

Made in lengths 8 to 24 inches. If your dealers will not supply you write us.

GEO. H. BISHOP & CO., Lawrenceburg, Indiana

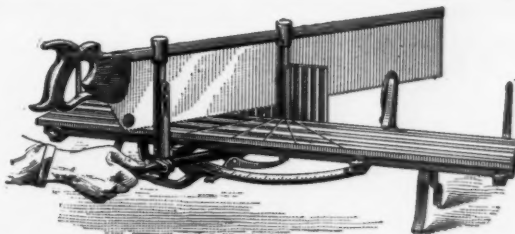
### Samples of Turnings and Blocks made on our Jobbing Shop Variety Machine



All above designs made with one set of Cutter-Heads included in the regular equipment of our **UNIVERSAL TURNING AND VARIETY MACHINE**. And the machine does this work at one-sixth of what it costs by hand. This gives the ordinary jobbing shop the means of getting out their regular turnings, etc., at a greatly reduced cost and also enables them to add a very profitable side line to their business by getting after more of this trade and working up waste odds and ends during the dull seasons. One concern we know of made \$36.00 clear profit from one day's run of the machine on turnings gotten out from waste material. Why couldn't you do as well?

The above is only one of the profitable features of the machine—the Variety Work it does makes it a complete jobbing shop in itself—but this is fully described on our large circular, sent free to any one interested, and it's worth having too. A postal will do.

C. Mattison Machine Works 879 5th Street  
BELOIT, WIS.



### Nicholls Common Sense Miter Box

We have endeavored to place on the market a Miter Box suitable for practical work, and having tested it thoroughly, we are satisfied we have succeeded in doing so, and are placing this Miter Box on the market warranted in every respect.

Nicholls Manufacturing Co. :: Ottumwa, Iowa

### Ball-Bearing Spring Hinges.

#### THAT ARE PRACTICAL

The Shelby Chief Double Acting Floor Hinge has solved the problem of easily get-at-able, hinges, impervious to water and dampness.

Doesn't go in the floor but rests on top.

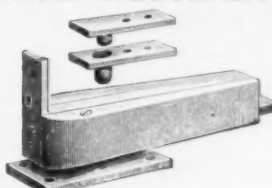
Easily applied, and very economical.

The labor saving feature is being appreciated by carpenters and builders everywhere.

Send for our free catalog which contains some sensible hinge talk, and also shows our full line of Double Acting Ball-Bearing Spring Butts and Builders Hardware. Free on request.

Write Today.

The Shelby Spring  
Hinge Co.,  
Shelby, Ohio







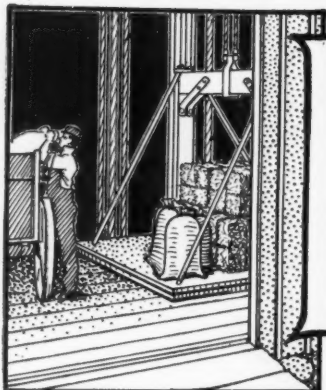
## PERFECTION ELEVATORS

ARE  
"BEST BY EVERY TEST"

For PASSENGER or FREIGHT SERVICE in Factories, Stores and Dwelling Houses.

Our Elevators are noted for their Easy Running and Serviceable Qualities. They are practically self contained and can be erected by any carpenter in a few hours. We furnish Plans for erecting. When writing, state your requirements.

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the Eaton & Prince Hand-Power Elevator demonstrates its many superior and exclusive points of excellence.

It invariably demonstrates that it is serviceable, safe, simple, satisfactory—a saver of time and money.

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To all Contractors and Builders.

We want you to try this rail and hanger

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For particulars write the

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HAND ELEVATORS**  
OF THE MOST IMPROVED  
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TRUNK, CARRIAGE,  
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AND  
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The Pump That Pumps

**MYERS**

Glass Valve

Myers Stayon Flexible Door Hangers

with steel roller bearings, easy to push and to pull cannot be thrown off the track—hence its name. "Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

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Double-acting, Lift, Tank and Spray

**PUMPS**

Store Ladders, Etc.

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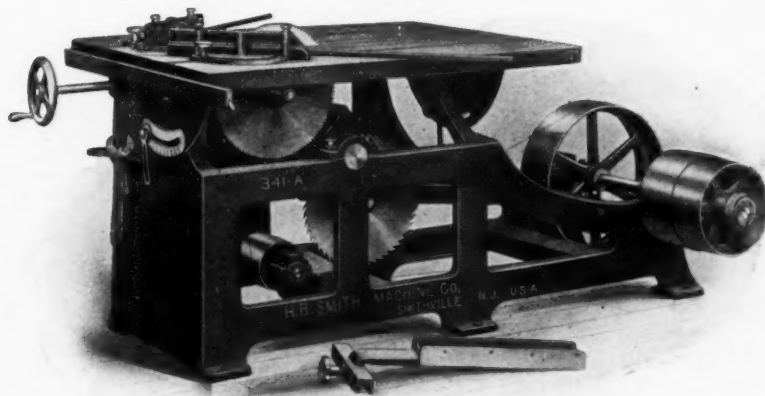
**LADDERS**



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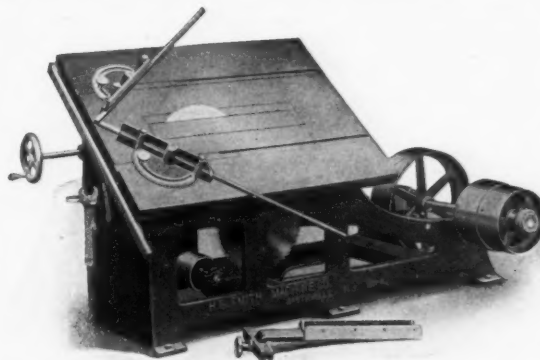
**Modern Shop Equipments a Specialty  
We Make 150 Different Kinds of Machines**

ASK FOR CATALOG



No. 341 A Combination Double Arbor Saw

**E**VERY user of machinery knows that if he were obliged to reduce his equipment to one machine he would retain a **Universal Saw**. The **Circular Saw** is the indispensable tool—the beginning of all things in a shop—therefore why not make a wise selection? We build 21 different types of sawing machines and feel competent to consult intelligently with you on this subject. The Machine shown here-with is very useful for general work, and a great labor-saver when operated on specific wood working problems. ¶ Please bear in mind that all machines designed by **Smith of Smithville** always contain approved features for the elimination of danger to the operator. We also guard against the annoyance and expense of breakage by building machines sturdy and well, regardless of the influence of low priced competition. The name **Smith** in connection with wood working machinery is a synonym of **Quality**. Write for special circulars and prices.



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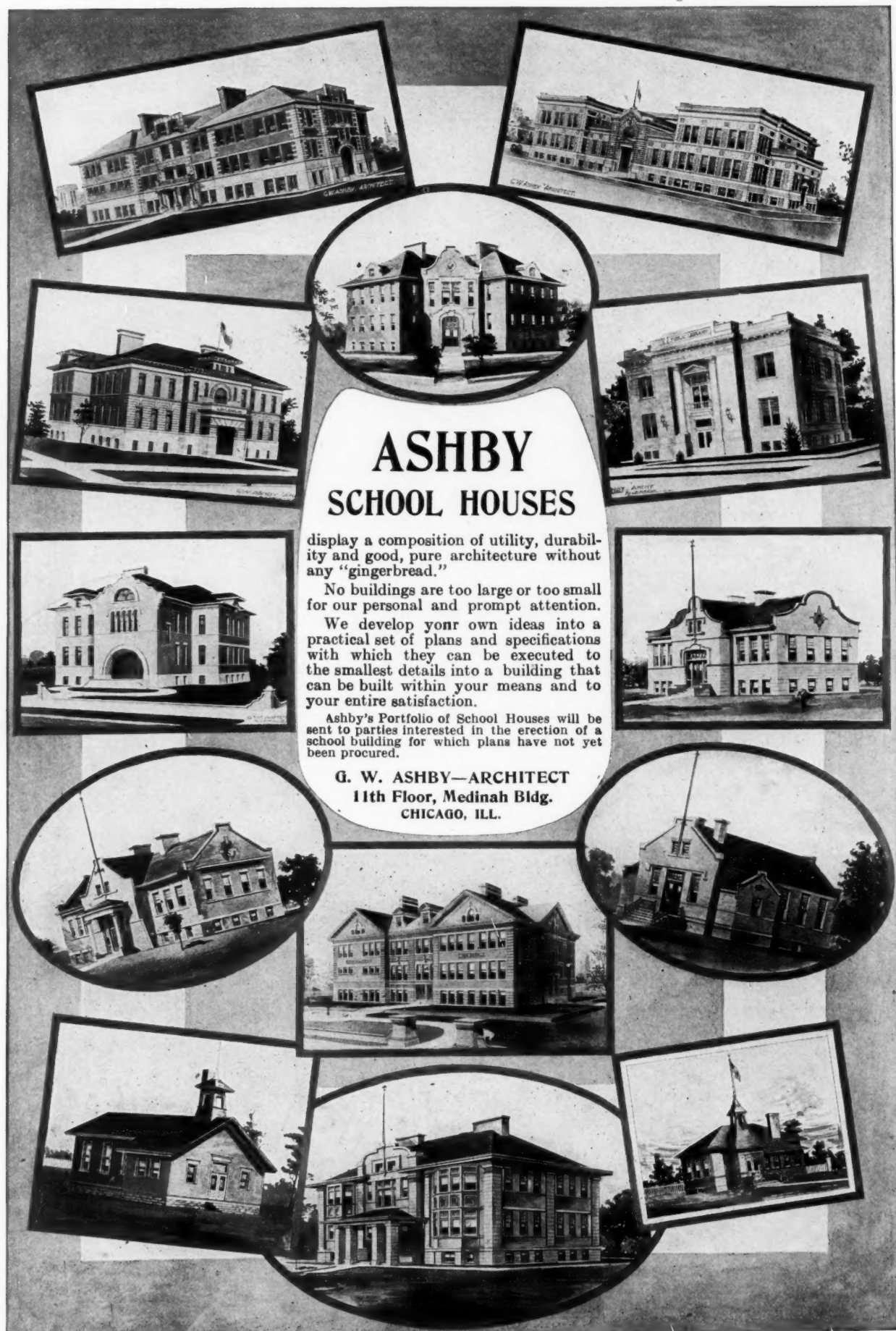
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display a composition of utility, durability and good, pure architecture without any "gingerbread."

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We develop your own ideas into a practical set of plans and specifications with which they can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

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Cheaper,  
Stronger,  
Lasts Longer  
than a  
Wood Bracket.

**THE TAYLOR**  
Steel Scaffold  
Bracket

Made from  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{5}{16}$  rolled steel; brace notched into top and sides in addition to being riveted. A single pair will carry a ton weight without even springing. The holding bolt is a special feature, it hooks around studding instead of going through it.

Two sizes, 48" and 60".

Write for our Catalogue and information on special trial offer.

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(PATENTED)

### NEVER BREAK

**BECAUSE THEY ARE MADE OF VERY HEAVY GAUGE METAL AND PERFECTLY CONSTRUCTED**

If the upper sash drops, the Monitor "Never Break" Sash Lock will pick it up from a lower point than any other; adjust the sashes perfectly, prevent all vibration, and lock securely, so it can not be opened from the outside.

MADE IN TWO SIZES AND ALL FINISHES BY

**The Champion Safety Lock Co.**  
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Don't Ask the Dealer for Sash Cord. Ask for

## "SILVER LAKE"

and see that he gives it to you. It is impossible to



substitute, as our name is stamped in red on the cord. Silver Lake Sash Cord is the Original Solid Braided Cotton Sash Cord and has been the standard since 1868. No other is just as good.

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Are sold DIRECT to Builders, Contractors and Mills at prices under the common ordinary goods.

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Write for catalogue and free samples and prices on gross, barrel, or any quantity.

Direct from the makers to you. Inquiries welcome.

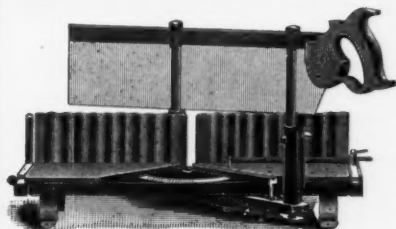


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34 Pearl St., Grand Rapids, Mich.

## GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality  
and  
Improvements

Automatic Stops  
for  
holding up saw.  
Corrugated Backs.  
Graduated.

Gauge for duplicate cuts and many other features.

Send for Circular  
"C."

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## ONLY SELF-SETTING PLANE

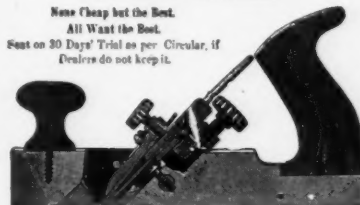
**Trial Costs Nothing if Plane is Returned**

THE BEST IS THE CHEAPEST.

None Cheap but the Best.

All Want the Best.

Sent on 30 Days' Trial as per Circular, if Dealers do not keep it.



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The first man in Ohio, California, South Dakota, and Wisconsin who sends us this Advertisement in August gets a \$3.25 plane free by paying the express. The following lucky men got planes free as above:

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**GAGE TOOL COMPANY**

VINELAND, N. J.



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BUFFALO, N. Y.



Delaware Avenue at Chippewa Street  
**ABSOLUTELY FIREPROOF**  
 250 Rooms with Bath and Long Distance Telephone

**European Plan**  
**\$1.50 per Day Up**

With Bath Connection.  
 Excellent Music and Grill Room. Send for booklet  
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**250 Rooms Newly Furnished**  
**With Brass Beds**

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Restaurant on the street floor—a restaurant where ladies are welcome.

Every other part of the house exclusively for men,

Telephones in every room.

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**T. F. PADDELL, - - - Proprietor**



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ON THE BOARD WALK

# NAIL SETS

## No. 999



This Nail Set is made of the best grade of tool steel, especially prepared for this purpose.

These Nail Sets are carefully tempered their entire length.

Diameter  $\frac{3}{8}$  inch through the knurling.

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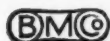


This our Slim Nail Set,  $\frac{5}{16}$  inch in diameter through the knurling. This tool is in every way the companion of the one shown above, and is preferred to the larger one by many carpenters.

Ask your dealer for them the next time you buy

**GOODELL-PRATT COMPANY**  
Greenfield, Mass., U. S. A.

**We Will Send  
ONE ONLY**



**Knurled Nail Set  
for Five Cents**

and a Two Cent stamp for Postage—if after trial you will part with it, we will pay you Fifteen Cents to get it back. This is done to make them known. You can have either  $\frac{1}{32}$ ,  $\frac{1}{16}$ ,  $\frac{3}{32}$  or  $\frac{1}{8}$  point.

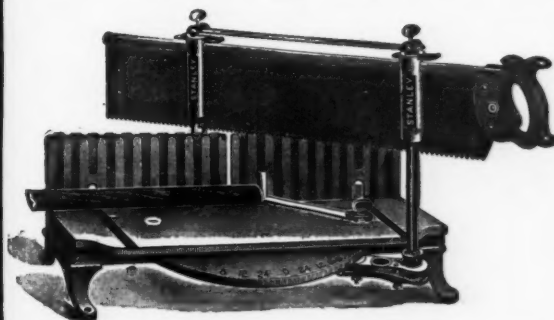
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**Braunsdorf-Mueller Co.**

201-211 Madison Ave.

ELIZABETH, N. J.

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MITRE BOX**



On the edge of the Solid Metal Base (where they will always remain correct), degrees are accurately graduated.

As the Swivel will automatically lock at any point, the operator can quickly set the Saw to cut the angle needed.

For duplicating work, a stock guide can be screwed in a threaded Plate, inserted in base board, making a perfect length gauge.

With these new features, the **Stanley Mitre Box** is more than ever a necessity to all wood-workers.

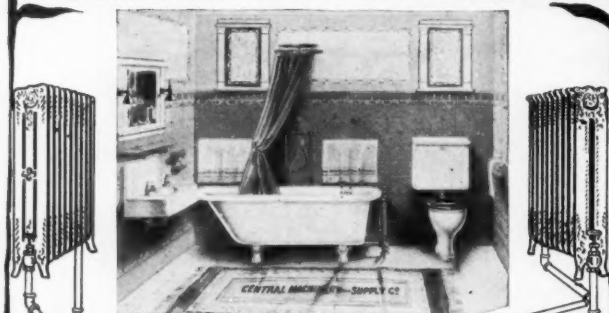
For full description, sizes, and prices, write for Catalogue No. 34.

*Sold by all Hardware Dealers.*

**Stanley Rule & Level Co.**

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DESIGNS**

Everything in Plumbing Supplies sold direct to you at lowest factory prices. Any man handy with tools can install our plumbing fixtures. We have developed a most perfect **all-iron-pipe** system of plumbing. Our book "**Plumbing Made Easy**" sent free to customers.

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## STERLING QUALITY

Fine Instruments Insure Accurate Work



### "STERLING" Architects' Levels

Are the Strongest, Lightest,  
Most Accurate Instru-  
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It will pay you to send for circulars and special terms. Immediate delivery guaranteed.

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One of the most useful tools a carpenter ever had. See full description in free Catalogue No. 186. With this tool in your chest you can give away half a dozen or more which it will render back numbers

**The L. S. Starrett Co., Athol, Mass., U.S.A.**



## COMPO-BOARD

A substitute for Lath and Plaster  
Can be put on by any Carpenter.  
It is Warmer, more Durable,  
Quicker and more Easily Applied.  
Manufactured all 4 ft. wide, 8, 9, 10,  
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Manufacturers of the

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**EVERLASTING**

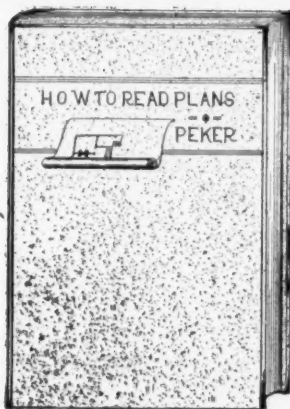
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60 Pages (5x7 ins.)  
43 Drawings in  
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Folding  
Plates

Showing the com-  
plete plans of a  
7 room house

Handsomely  
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Many building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing.

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Have you seen the  
**NEW BRACE?**

Adjustable 6, 8, or  
10 inch!

It will bore a hole  
centered one inch  
from a corner where  
ordinary brace can-  
not work: : :



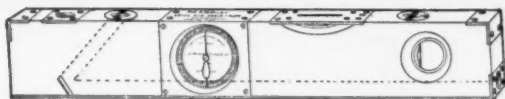
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**The E. S. Brace Co.**

NIAGARA FALLS

NEW YORK

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All Progressive and Up-to-date Mechanics as well as Manufacturers having use of a Level, are getting one

An instrument with which at one glance you can get the true slant on any line or grade either in degrees, inches or percentage, or all at the same time, and will at once give the exact distance need to plum up to a true level.

A Civil Engineer that you may have with you at all times.

The most practical, durable and convenient instrument of the day.

The longitudinal recess which is shown in cut is well worth the low price of the instrument.

Write at once for large list of testimonials from all over the United States, and special introductory price given only to first applicants with privilege of taking agency. Address Edward Helb, Railroad, Pa.

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The Phoenix Sliding Blind Co.

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C. W. MILLER.

**Comfort!**

**Economy!**

**Convenience!**

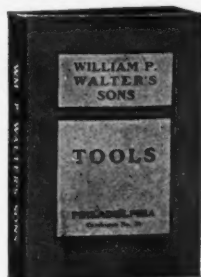
The lately improved springs and corrugated steel rods put the "PHOENIX" far in lead of less improved styles. Write for Catalogue "C" and free samples, showing construction.

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BRIDGE & CANAL STS.

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**WM. P. WALTER'S SONS**

Tool Headquarters

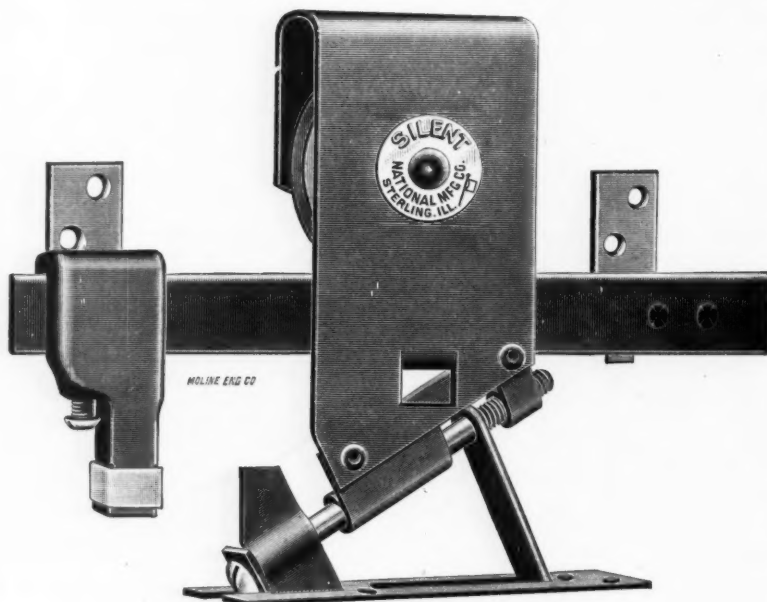
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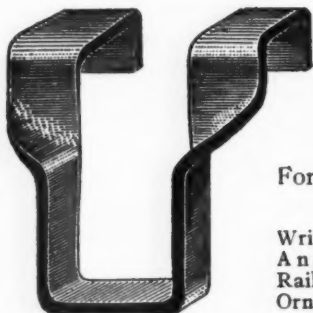
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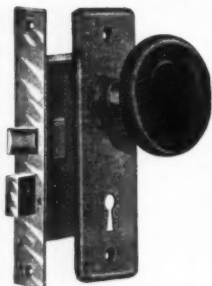
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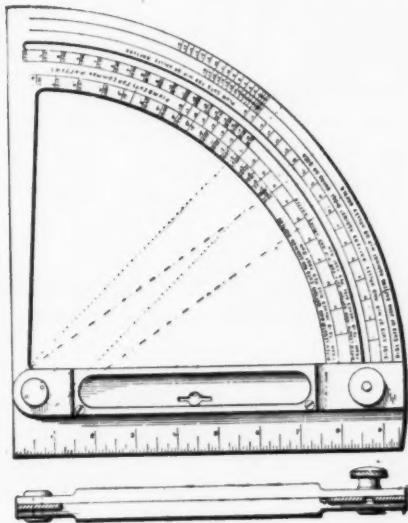
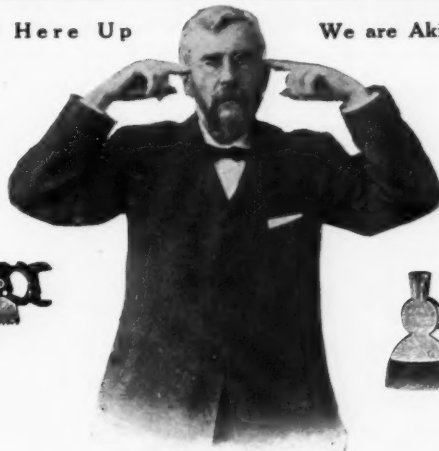
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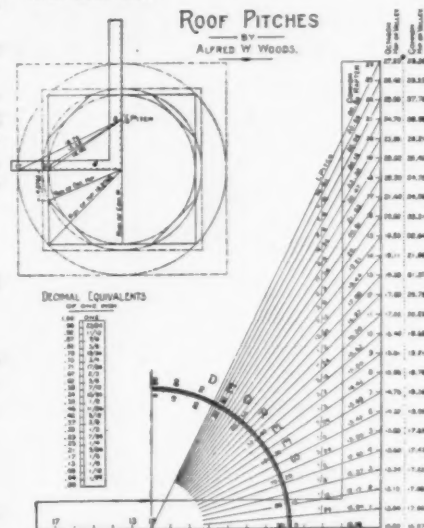
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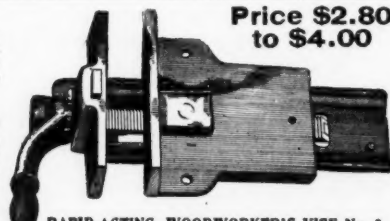
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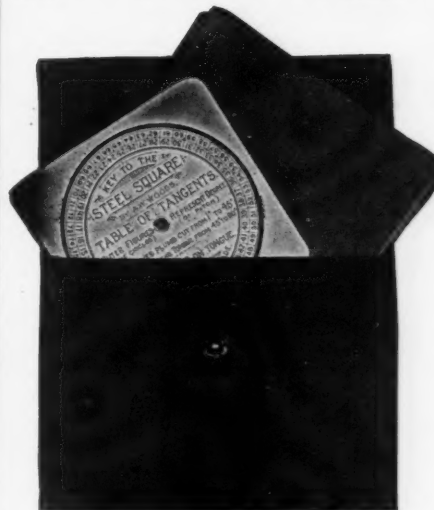
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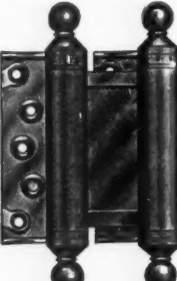

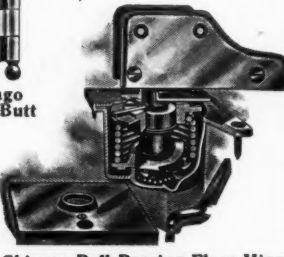
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## American Carpenter and Builder

Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill.  
under the Act of Congress of March 3, 1879

*Published monthly by*

**American Carpenter and Builder Company**

185 JACKSON BOULEVARD, CHICAGO.

VOL. V

AUGUST, 1908

No. 5

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades.

Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

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UNLESS a man is a hustler his prayer for work is apt to remain unanswered.

LISTEN to the hard-luck stories of others if you have to, but don't tell yours.

DID it ever occur to you that it takes less time to do a thing right than to explain why you did it wrong?

ONE good way to avoid excitement is to live within your income.

MEN grow strong through doing; when you do too much for a youth he does nothing for himself.

THE trouble with most young men is that they do not learn anything thoroughly, and are apt to do the work committed to them in a careless manner; forgetting that what is worth doing at all is worth doing well, they become mere drones and rely upon chance to bring them success.—Marshall Field.

## Enterprise

ABLADENSBURG merchant was dozing in his store one day when a little girl with a pitcher appeared in the doorway and asked for a quart of molasses. The storekeeper yawned, stretched himself, half opened his eyes, and then in an injured tone said, "Ain't there nobody in Bladensburg that sells molasses but me?"

There are degrees of enterprise running away down to laziness, and after that there are degrees of laziness clear down to bed rock. It's a safe bet that this merchant—in his waking moments—was the Boss hard-times-howler of all Bladensburg. There is only one kind of enterprise that spells business success, this year or any other year; and that is the live, wide-awake, hustling-every-minute kind.

## Let the Public Know

IT IS a fact well known to carpenters, contractors, building material dealers—in fact, to everyone in touch with conditions in the building world—that this is a real bargain-day time for building. Through a combination of circumstances, well known to you, a building which would have cost \$3,000 a year ago, can be erected now for probably \$2,400; more than that,

it would be built with less delay, and also with more care now than at any time the past five years.

You know why this is: Building materials away down; skilled, careful workmen plenty; contractors bidding closely for work. Emphatically, from the point of view of the home builder or investor, *now is the time to build.*

You know this, and we know it; because we are in contact with the conditions every day. But the great general public does not know it. It remembers only the sky-high prices and the busy half-attention of the contractors of other years; it does not see its opportunity now to cinch your bargain and at the same time to make a safe investment.

Don't you think that it would help matters—would increase your business—if every man in your town and county could know the real state of things? Can't you see a quick return to "rush times," if all the men of the past three years—who wanted to build but were afraid of the high prices—would build now?

But there is a great gulf between you and the public, the public does not know nor realize the good things you have for it. This gulf must be crossed by you.

Down the street in his office sits a man, in his shirt sleeves, feet on the desk, who will help you—the editor of your local paper. He is hungry for news, for the good "stuff" that will boost business. Go to him as a delegation; contractors, carpenters, dealers of building material. Tell him the facts. Give him the figures, which you know, but which the public does not know. Explain to him what it all means toward real money saving and toward good work.

He will help you spread the good news abroad till every man shall know. What we want now is the widest kind of publicity to the fact that this is the time to build.



### Teach the Boys

**W**HEN you put a boy to work with you, no matter whether it is your own boy or some other boy, and start him to using tools, it pays to take a little time and trouble in teaching him how to use the tools properly; do not turn him loose and let him pick up knowledge from observation. Boys are quick to learn and will pick up lots of knowledge that way; but sometimes they may see a man doing things in a wrong way and so gain a false impression of how the work should be done.

Take any of the tools in common use—practically every man now and then in a careless moment will use them improperly. If a boy doesn't receive some specific instructions he will be at a loss to know what is proper. Take the use of the hand saw, for example: There is many a man who has been for years at the work who doesn't handle his saw as he should. The saw bobs around; and the point and the heel play up and down like a seesaw; and there is utter disregard

of the proper and what might be termed the dignified handling of the saw. It is not a matter of mere dignity, however, to handle a saw as it should be; but it is a matter of training for the sake of good work and true cutting. So when you put a boy to using a saw teach him how to use it right. It is worth the time and trouble to you in that it will make the boy's services more valuable; but more than that it is very important to the boy, for it starts him off in the right way.

The same thing applies in the use of planes, chisels, augers and all other tools. A little instruction as to the right principles at first will start the boy on the right road early in his career and he will do much better work while he is a boy and develop into a much better carpenter when he becomes a man.



### The Pride That Counts

**I**T DOESN'T matter so much whether your employer is proud of you or not, as whether you are proud of your work. If you can't take pride in it, it's not fair to expect somebody else to, while if you do take pride in your work, that will help you more than anything else.

The scrap box, like charity, sometimes covers up a multitude of sins—things that ought not to be. Many a piece of work is spoiled and then smuggled into the scrap box. Why? Because the one thing the average man hates to do more than anything else is to confess that he has made a mistake or done something wrong. It hurts one's pride—that thing which keeps us up to the mark and gives us lots of pleasure, but does hurt at times.



### New Department

**T**HE Home Workshop, a new department, makes its appearance in this number of the AMERICAN CARPENTER AND BUILDER. Its purpose will be, from month to month, to suggest and illustrate in a practical, yet interesting way, various ideas for spare-time home occupation. It will solve for a good many carpenters that old problem—what to do in dull seasons; it will stimulate the boys to new effort along the line of manual training; and it will appeal in a practical way to all amateur craftsmen—men who appreciate good hand-made furniture, and who enjoy making it, pottering around the home work shop of a rainy day.

Browning was very fond of expressing the belief that idleness, inaction, is the worst of all sins. We believe that that is so; anyway a choice line of deviltry or worthlessness is pretty sure to develop where idleness is. The best scheme to be protected all around when "the job" fails is to have a good side line to fall back on. Handicraft furniture making is enjoyable; it may be profitable; and in every case it will keep the workman out of the rut of inaction. Try it. The Home Workshop will help you.

A. Contractor Plans His Summer Vacation







The Home of Byron Williams at Glen Ellyn, Ill. E. E. Roberts, Architect

**H**OW successful our city business men are in escaping to the country suburbs to live, and how successful our architects and builders are in providing there for their varied needs,—all in a pleasing and practical way—is well illustrated in the suburban home of Byron Williams, the humorist

and poet who is known to the reading world as "Uncle By." It is located on Lake Ellyn at Glen Ellyn, Ill., twenty-three miles west of Chicago, thirty-five minutes from the city. The house is built of cement, the outer coat being of pebble dash. The roof is of slate. The price of construction would vary in dif-



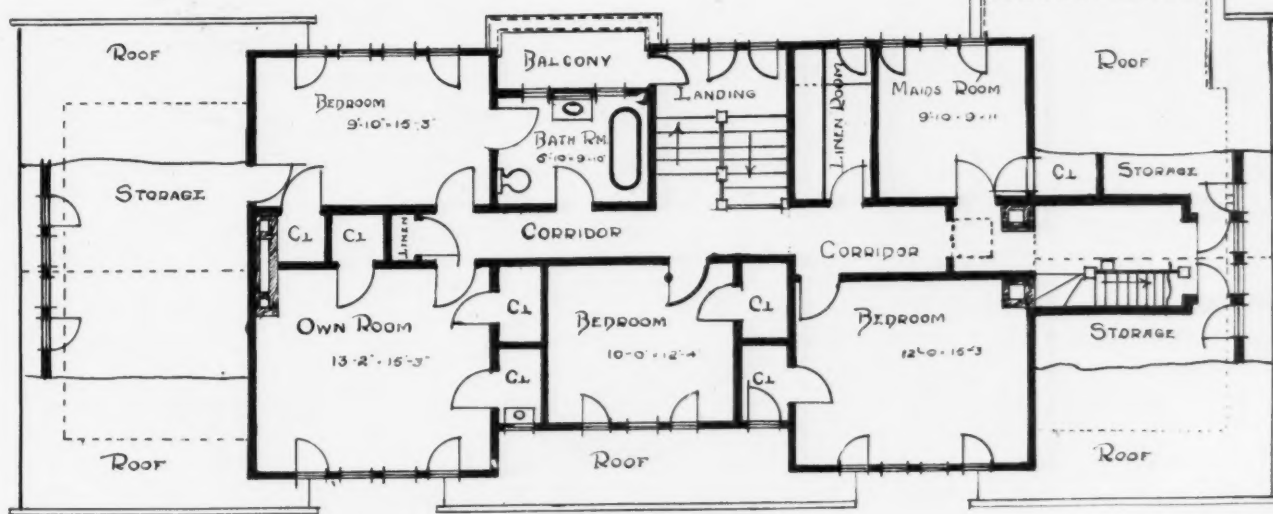
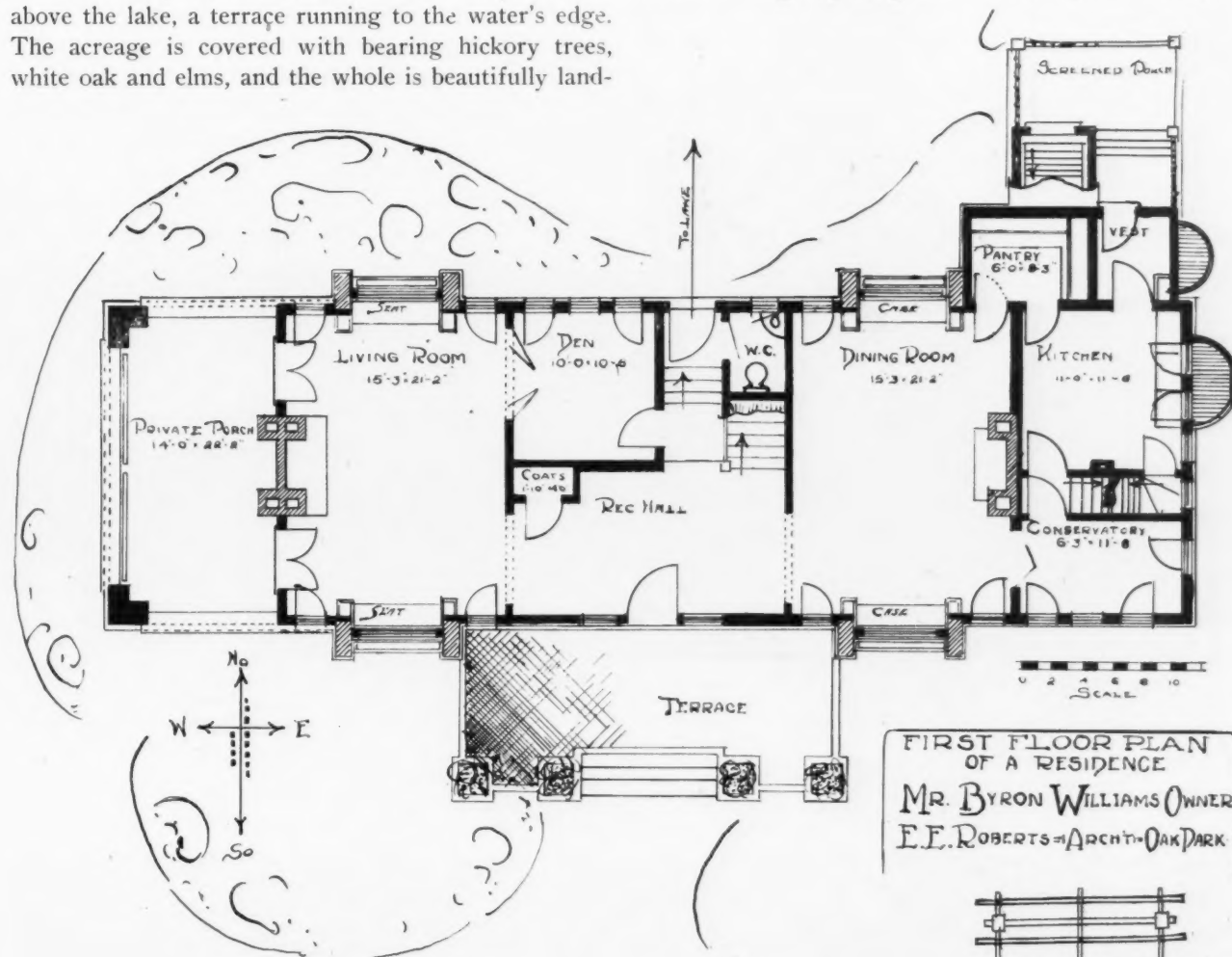
The Dining Room, Showing Well the Artistic Ceiling Paneling

ferent localities from \$8,000 to \$11,000, the interior being finished in the finest oak and birch. E. E. Roberts, of Oak Park, is the architect.

"Sesamere," as it is called, stands thirty-five feet above the lake, a terrace running to the water's edge. The acreage is covered with bearing hickory trees, white oak and elms, and the whole is beautifully land-

climbing roses and appropriately shielded by shrubs.

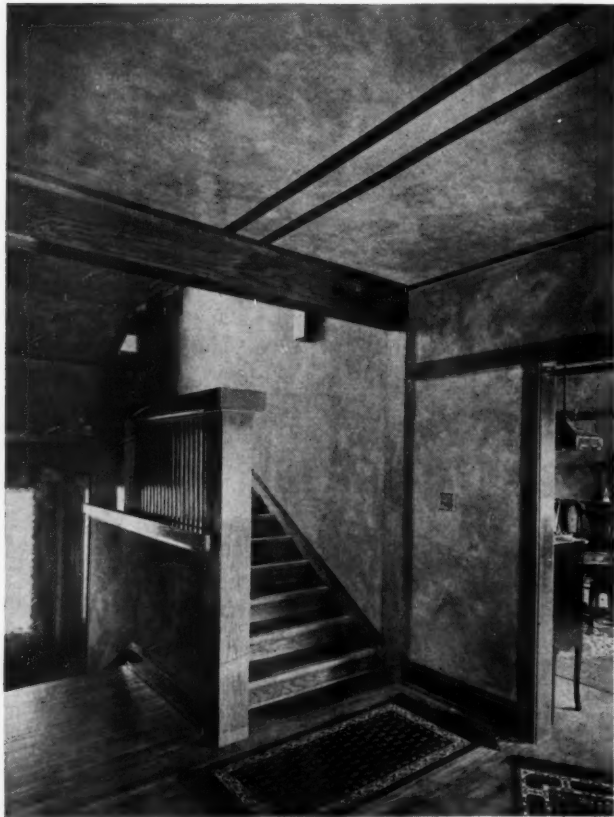
The name "Sesamere," by the way is a contraction of "Sesame" and "mere." "Sesame in this sense means a magic opening and "mere," by the water, or



SECOND FLOOR PLAN

scaped. The picture of the residence was made in the spring before the shrubbery had become well started. The house is now banked with vines and

by the lake—hence, a magic opening by the lake. Inasmuch as the home is on a crest between two higher crests and on the shore of Lake Ellyn, the name is



**The Stairway—Inside Trim Is Simple and Rich**  
most appropriate. It was but recently that Mr. Williams succeeded in fitting an appellation to his place, judging from the following from his pen:

"Naming a country place is more difficult than naming a baby. There are so many pretty names that won't fit and so many fitting one that are not pretty! The most important step in naming a place is to get one. Then the trouble begins. You suggest 'Hickorynook,' and your wife isn't convinced until a friend of yours in the same place calls his home 'Hickory Ridge.' That puts you out of the hickory race about the time your wife is growing enthusiastic. You sit on the front porch in the evening and suggest names like 'Crestnook,' 'Sunset Lodge,' 'Laughalot,' 'Rose Cottage,' 'Edgewood,' 'Crestlynn,' and 'Wierwood.' But your wife sniffs at each and every one of them. Then you search the *AMERICAN CARPENTER AND BUILDER* for suggestions and end up by consulting the dictionary, a book of synonyms and the Holy Bible, but to no purpose. Finally your wife begins to make suggestions, and you sniff at all her names just to get even. When there is danger of her overriding your authority and settling on 'Heartsease,' or 'Fernbank,' you roar boisterously to laugh her out of court. After forty or fifty names have been rejected, you go to bed and dream you have the most appropriate handle that ever graced a happy home, but by morning you have forgotten it and have to start a over again.

"Anyone having a real dainty cognomen for a country home will confer a favor by sending it along. Otherwise the house may be worn out before the argument is settled."

Mrs. Williams is the originator of the color scheme



**The Screened or Sun Porch—A Delightful Feature in Summer or Winter**



throughout the house. She was imbued with the idea like that of the woman who built all her closets just to suit and erected the house around them. Mrs. Williams selected the brick for the great fireplace in the living room and had the first floor and stair walls decorated in slightly varying shades of harmony, on sand-finished plaster. The brick are of a mellow terra-cotta color and all the walls downstairs vary but slightly from this shade, the idea being that each room should have just enough variance to prove its individuality but not enough to mar the symmetry of the whole. The ceilings were first painted, then

carried out in the dining room (which is the same size as the living room) except that the space between the posts is used for serving tables instead of window seats. From these posts run the paneled effects on the ceilings of both rooms. This overhead trim is also carried out in all other first floor rooms, but modified. The picture mold is the top casing on the doors and windows and completely girdles the rooms of the first floor, all at the same height.

The upstairs rooms were finished in white coat and left for the first year, so that the house might settle and the shrinkage cracks all become visible before



Reception Hall, Looking Toward the Living Room

clouded lightly and watercolored. The side walls are merely finished in watercolor, a trifle darker than the fireplace, and the oak trim is stained just a bit rosier than the natural wood. The effect is restful and pleasant, especially when one stands on the private porch and looks seventy feet through the house to the far end of Mr. Williams' den. You can almost see the quieter shades of sunset and feel the cheery influence of an autumn eventide.

At either end of the living room, between huge oaken box posts, is a wide and hospitable window seat below the large windows. The same effect is

the decorating. The second floor is finished in birch of the natural color.

Mr. Williams has spent much time and thought on the grounds, which were in more or less of a ragged condition from building; and, since these pictures were taken, a transformation scene has been going on. A macadam road winds about the house, shrubs, flowers and fruit trees have been planted, rustic boxes placed and an artistic fence erected. Speaking of the fence, the owner says:

"When I built my suburban home I was of a very trustful nature, as regards fences. Later, I lost some

of my optimism and because city visitors insisted on walking through my flower beds, erected a fence on three sides of my property. This scheme was a great success as a rabbit trap. The first week I caught several hundred trespassers. The most of these were in too great a hurry to retrace their steps, and climbed over the fence. This was hard on the fence, so I ran a barbed wire along the top. This was hard on the trespassers.

"Gradually I worked the list of marauders down to a negligible quantity and with the aid of a strong-

\$1,200, but cost considerably less than one-tenth of that amount. The grapevine grows a foot a week and in another year the entire fence will be a mass of vines. Did you ever smell a wild-grape blossom in the spring-time? Isn't it simply heavenly?"



### Largest Saw Mill Belt

The largest leather belt ever installed in a Pacific Coast saw mill is one recently put in by the Pacific Lumber Company, at Scotia, Cal. It is 143 feet long,



The Living Room—Spacious and Comfortable. Broad Window Overlooks the Lake

lunged bull dog, discouraged regular traffic over my lawn—but the city trespasser is hard to down, and I agreed, finally, that I must have a front fence. A Chicago foundryman made me a price of \$1,200 on a fence and it took my wife three days to bring me to! After I was feeling as well as could be expected I turned the gardener loose on a rustic fence made of burr oak and shell-bark hickory treetrunks averaging about three inches through. These were set in cross panels like the figure "X" and strong rails placed top and bottom. Boulder stones were laid roughly for posts and wild grapevine planted along the fence. The result is a front fence that looks like

6 feet wide, and required the best part of the hides of 245 steers—twelve carloads—in its manufacture.



### Woman's Last Word

"I broke a record today. Had the last word with a woman."

"Didn't think it possible. How'd it happen?"

"Why, I said to a woman in the car, 'Madam, have my seat.'"



It's cheaper to pay interest on money with which to build now, than to pay the coming high prices.

## Chicago Flat Buildings

By Herbert Shearer

**F**LAT buildings have solved the problem of how several families may occupy the same plot of ground at the same time, but flats are not interesting like houses. They may be necessary—a necessary evil perhaps—and so long as people think

little outside balconies occasionally where a prisoner can sit and enjoy a breath of fresh air. The flowers and shrubs in this little court make up a beautiful picture in what would otherwise be a mere enclosure between brick walls. The janitor takes a great interest in this beautiful little flower garden and plants it carefully every spring and tends it during the summer. There is a fountain in the center where the birds gather on bright summer mornings to bathe in the mingled spray and sunshine while chanting their approval in harmony with the gentle babbling sound of trickling water. It is a brave and successful attempt to smile under the discouragements of modern civilization.

The next cut shows a three-flat building in course of construction. What are known as three-flat buildings are said to be the most livable of the flat tribe because they are supposed to have light and air on all sides. This is a mere fiction in some cases, but there are more chances in favor of a sufficient supply of light and air in a three-flat building than where more habitations are crowded into one structure.

Three families generally command enough respect to secure steam heat when they need it, and their combined rents are sufficient to buy janitor service, including all the impudence that goes with it.

These buildings generally are occupied by the owner, who rents out the second and third floors and furnishes heat and hot water on tap for the whole building. This same plan has been tried a good many times with two



No. 1. On Kenmore Ave., in Chicago, Where the Cliff Dwellers Live

they want to live in such places it is our business to supply them and take our profits.

The first illustration shows a row of flat buildings in one of the best resident sections of Chicago. It is built up solid from one street corner to the next, a distance of an ordinary city block. There is housing here for fifty families and only one outside porch for the whole distance between the two streets. The inmates take their fresh air filtered through the window curtains.

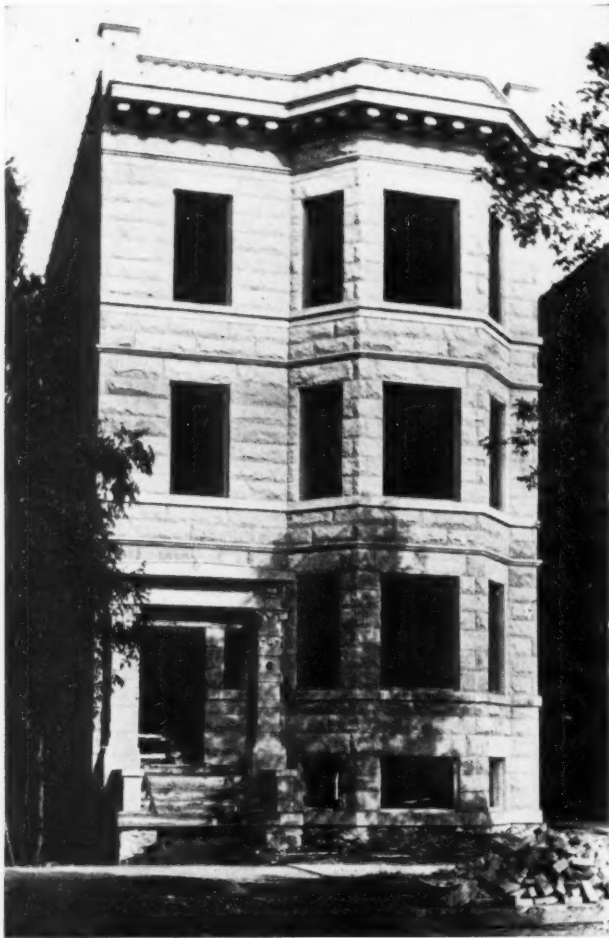
The cliff dwellers live here. They pull themselves in at night and let themselves down in the morning very much the same as the old Axtecs did, only these modern fellows have a lock on the lower round of the ladder, and every last mother's son of them carries what he calls a latch key. They do this way instead of pulling the ladder up after them. That is the principal improvement.

The second illustration shows two buildings which were erected on a corner lot. The second one reaches back to the alley. The beautiful little flower bowered court is placed between the buildings and there are



No. 2. A Splendid Attempt to Improve Modern Flat Living Conditions





**No. 3. A modern three-flat building.** There are five rooms on each floor; living room; two bed rooms; dining room and kitchen, besides bath room. Steam is supplied from a horizontal tubular boiler, and hot water is always on tap from a round jacketed stove in the basement.

story buildings, but the tenants say they suffer too much from the owner's forgetfulness. I am writing this with the best resident sections of the city in mind.

The fourth illustration shows a six-flat building, which is the most popular of all styles of flat architecture in Chicago. A great improvement has been made in this class of buildings during the past five years. The cut shows a new six-flat building with a corner of an older style at the left. The advantages in this new design are more light, better air and separate private porches for each family, both in front and at the back. There are eight rooms and two bath rooms in each apartment except one on the first floor, where a room is sacrificed for the main entrance hall. The disadvantages are higher rents, but the owners seem to think that even this is an advantage.

The fifth illustration shows another six-flat building having six rooms in each flat, except one flat on the first floor, which has only five rooms because of the extra space taken up by the main entrance. The layout of the rooms in this plan is the most satisfactory of any six room flats I have examined. The man who put up this building says he has built from this plan many times, and he has improved it until he can find no room for further improvement without increasing the size and consequently the expense, and he doubts then if it could be made any more satisfactory to the average family of, say four persons.

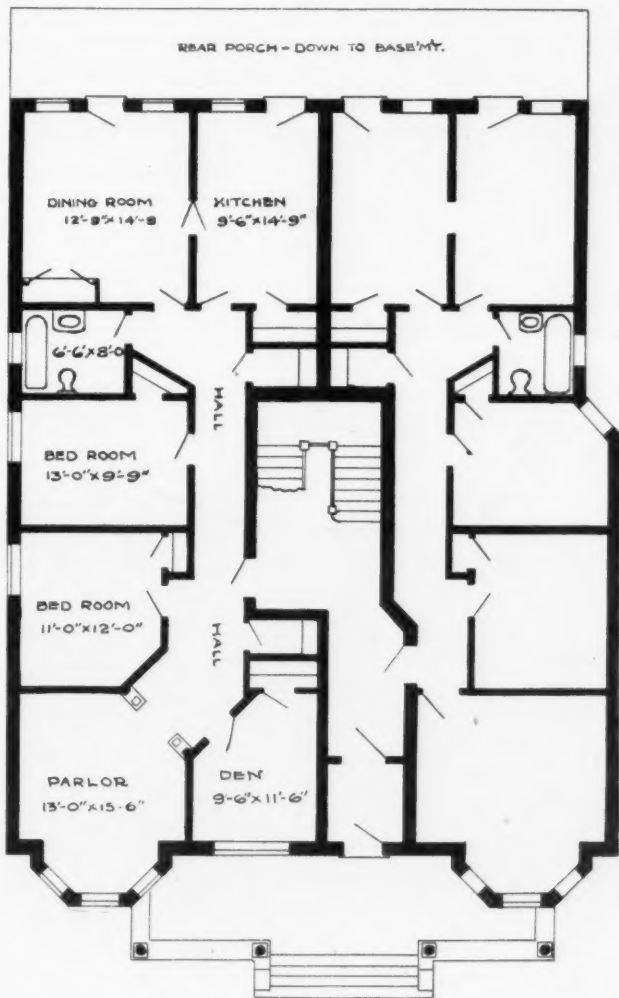
The plan and size of the rooms are given in the detail drawing. It will be noticed that the halls are as short as they could be and connect the different rooms, and they are wide enough to make a good appearance. The light from the front and back is utilized to the best possible advantage and the strip



**No. 4. A new six-flat building on Sheridan Road.** It represents the best and most fashionable type of flat construction. There are eight rooms and two bath rooms in each flat. Four solid brick walls extend through from front to back, and the construction is what is termed "slow burning." At the left is another six-flat building about two years older. Few private porches were built up to two years ago.



No. 5. A modern six-flat building. The layout of the rooms as shown in the accompanying floor plan is exceptionally good. For the size and cost, it is the best arranged of any flat examined. The owner has built from this plan many times, each time making improvements, till now he calls it perfect.



First Floor Plan, Five and Six Room Flats—so Called Perfect Arrangement

of land eight feet wide between the buildings gives a circulation of air that is very much appreciated.

There was a strip eighteen feet wide between this building and the one next on the right, but the cupidity of the owner got the better of him and he crowded in a little eighteen foot building to house three families in oblivion and he actually found people willing to pay him \$35.00 per month for the privilege of existing in five little dark rooms without light or air except from the front and rear, but there seems to be no law against it, and the practice will doubtless continue until the legislature wakes up to the injustice of it.



#### In Memoriam

Whereas, a belated but good and all wise fashion has decreed the death of the Merry Widow hat, and

Whereas, the Merry Widow hat has been an all 'round confounded nuisance, inasmuch as it has gouged out eyes, stopped trains, cut holes in men's faces and pocket books, and

Whereas, it has performed other and divers deeds of wanton cruelty,

Be it resolved, that we are darned well pleased and will dance at the funeral.



#### Sounds Well!

"I can't see why they do not introduce fireproof buildings in hell," remarked a lawyer to his friend, a contractor.

"Simple as eating ice cream with a monkey wrench," answered the glib tongued contractor, "for you must remember there are no contractors there to attend to the building."

## Practical Family Ice Houses

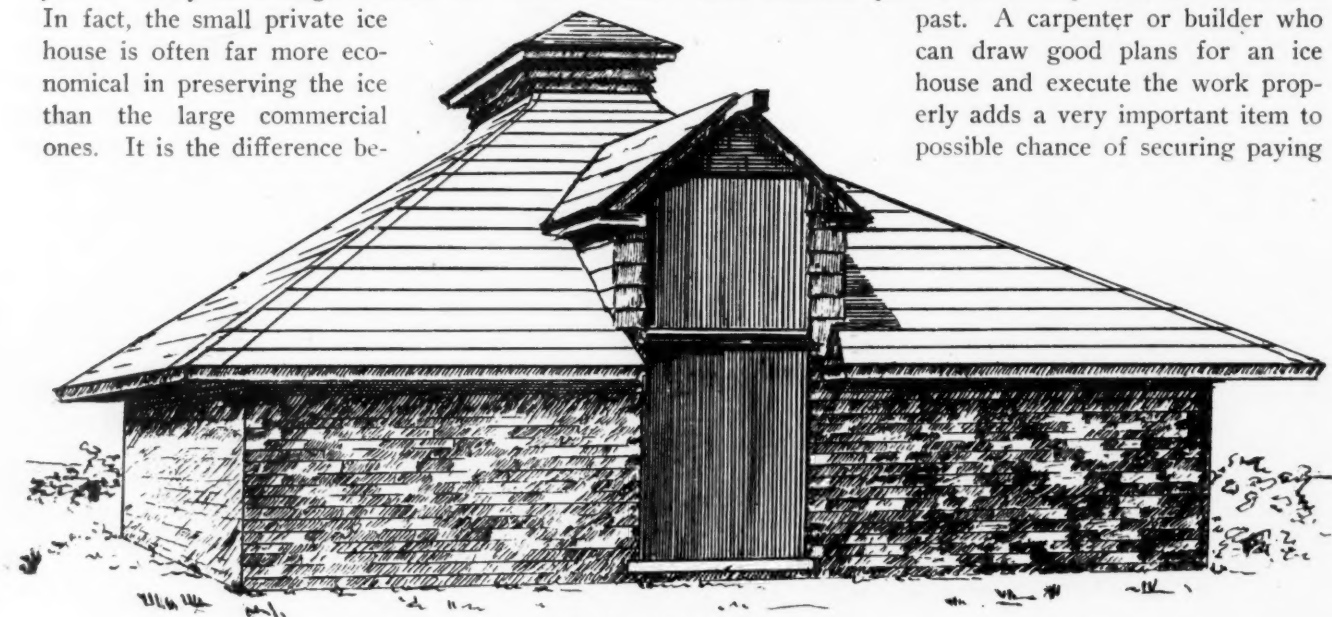
HOW TO BUILD A SMALL ICE HOUSE TO BE ECONOMICAL AND SATISFACTORY—DESIGN GIVEN FOR A COMBINATION ICE HOUSE AND COLD STORAGE CELLAR

By George E. Walsh

THE increasing use of ice for private purposes, and especially on country places where milk, cream and fruits are raised in abundance, makes the small ice house an essential part of every well regulated home. Dependence upon the ice man is both uncertain and expensive in many parts of the country, and when with the expenditure of a few hundred dollars we can have our own ice house with all the luxuries that go with it there is little wonder that there is a growing demand for such buildings. A good deal of misconception has existed in respect to ice houses and the keeping of ice, but today it is possible to keep a small quantity of ice for family use just as easily as a large amount for wholesale use. In fact, the small private ice house is often far more economical in preserving the ice than the large commercial ones. It is the difference be-

produced. There are almost as many different types of ice houses as there are of dwelling houses. Some are ornamental to a place and others are so plain and ugly that they disfigure the landscape. A few are so poorly arranged that they are very troublesome to use and the matter of getting at the ice when needed is so clumsily arranged that melting goes on rapidly whenever a cake of ice is removed.

It is just as cheap to design and construct a simple but artistic ice house as it is to build an ugly one, and it is just as easy to make one that will reduce the cost of time and labor to get at the ice as to design one of a difficult nature. There has been too little attention paid to these important details in the past. A carpenter or builder who can draw good plans for an ice house and execute the work properly adds a very important item to possible chance of securing paying



A Brick and Stone Ice House

tween careful, scientific methods of construction and old-fashioned systems.

Ice to be preserved properly should be protected on all sides from outside air contact by six or more inches of sawdust and an air space between. This is the first cardinal principle. The other two points that must be observed equally well are perfect drainage underneath the mass of ice and perfect ventilation above. As the ice melts, the water must be drained off or it will melt the ice rapidly. Likewise the moisture above must be carried away rapidly, or it will cause melting above and all around. If conditions are provided for these necessities ice can be kept indefinitely in the small private house.

The type of house is of importance. It may be built partly or wholly under ground except the roof, or entirely above ground. Both types can be made successful and economical. The walls may be of brick, stone, cement or wood, and equally good results

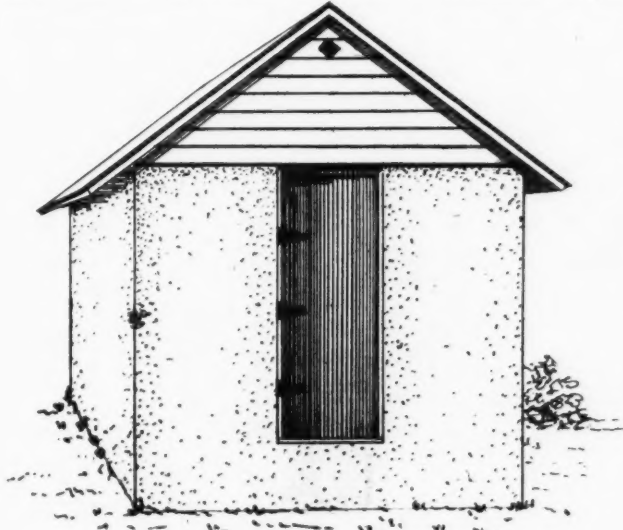
jobs. Good ice house designs are about as scarce as good designs for country homes are abundant.

The size of an ice house for private uses should be considered by a prospective builder. The average householder has only vague ideas as to how large an ice house he should have for his family uses. For the ordinary family an ice house with inside measurements of 8 by 8 by 8 should answer all purposes, if the ice is simply needed for cooling the kitchen ice chest and for table drinking purposes, and for the making of ice cream. But if there are cows kept on the place, the cooling of the milk is important, and the ice house should be about 14 by 14 by 14, or possibly 16 feet for the last dimension. This inside measurement will accommodate ice enough to carry one over the season with a liberal margin for emergencies.

The cost of such an ice house varies according to the type and the finish outside. A good deal depends upon the soil on which the house is constructed. If



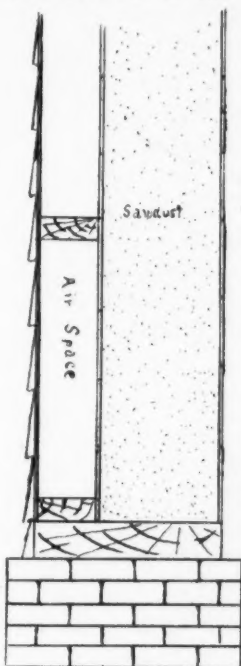
loose soil so the melting ice can drain away naturally, the house can be constructed directly on the ground and built entirely above. All that is needed is a layer



A Concrete Ice House; Cost \$160

of six inches of coarse stone and gravel packed firmly and smoothly down. The foundation walls of stones or brick should be carried up about twelve feet, and 8 inch chestnut sills laid on these. The sills should be 2 by 6 inches, and the 14 foot studding be set with 2 foot centers. Two by six inch joists nailed together in pairs will answer for corner posts. Both posts and studding are nailed to the sills, and not framed.

The house should have double inner walls, the inside space of six inches being filled with sawdust and the outside of three inches being left for an air space. Up and down siding should be used for separating the air space and the sawdust compartment. Un-matched lumber will do for both inside walls, and outside; the finish can be made in any way desired. The corners of the siding must be left open so that



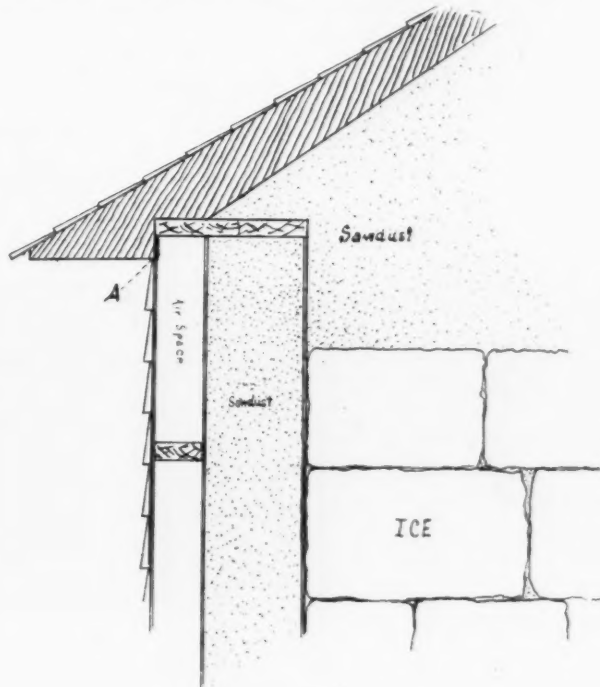
this type is of course out of the question, but if stones

the air in the outer space can have free circulation. If this air is confined it will melt the ice. When the sun heats the outside walls it communicates the heat to the inclosed air space, and if this latter is made too tight the heated air would in time penetrate to the sawdust inclosure and then melt the ice. But by having a free circulation the air carries the heat off and protects the sawdust.

An ice house of this description and size can be built for \$150, or if an artistic exterior finish is desired the cost may be extended to \$200. The cement or grout ice house can be constructed for even less. In regions where stones are scarce

are abundant it can be built for nearly half the cost of a timber ice house. Very little wood is needed for this kind of a house. The old-fashioned grout ice house was built mostly underground and without an inside space for sawdust. The sawdust was simply placed over the bottom and stuffed around the sides and over the top of the ice. The walls were about a foot thick, made of stones and cement grouted together. An ice house of this type cost less than a hundred dollars. About twelve barrels of cement would answer the purpose and eight loads of sand. The chief cost then was for the wooden roof and the door and windows and the labor.

But an all-concrete ice house is preferred today and produces far better results. It is made of walls that have an air space between, and thus the ice is kept from melting rapidly. The construction of such an ice house is simple and can be built by almost any one familiar with carpentry and ordinary cement work.



A: where wall is left open to ventilate air space

For drainage purposes the floor of the house is covered with a six inch layer of gravel and broken stone. This is pounded down hard so a good floor is obtained that will not sink in places under the dripping of moisture. The walls should be about sixteen inches in width. Ordinary molds for the walls are made of common boards, set up in three inch widths and a ten-inch space between. The walls should be reinforced with quarter inch iron or steel rods placed twelve inches apart in both directions as the work progresses.

The walls are built in sections two feet high at a time, and the outer and inner walls are bound together by placing galvanized iron strips across each section. The concrete is made of one part cement, two parts clean, coarse sand and four parts broken

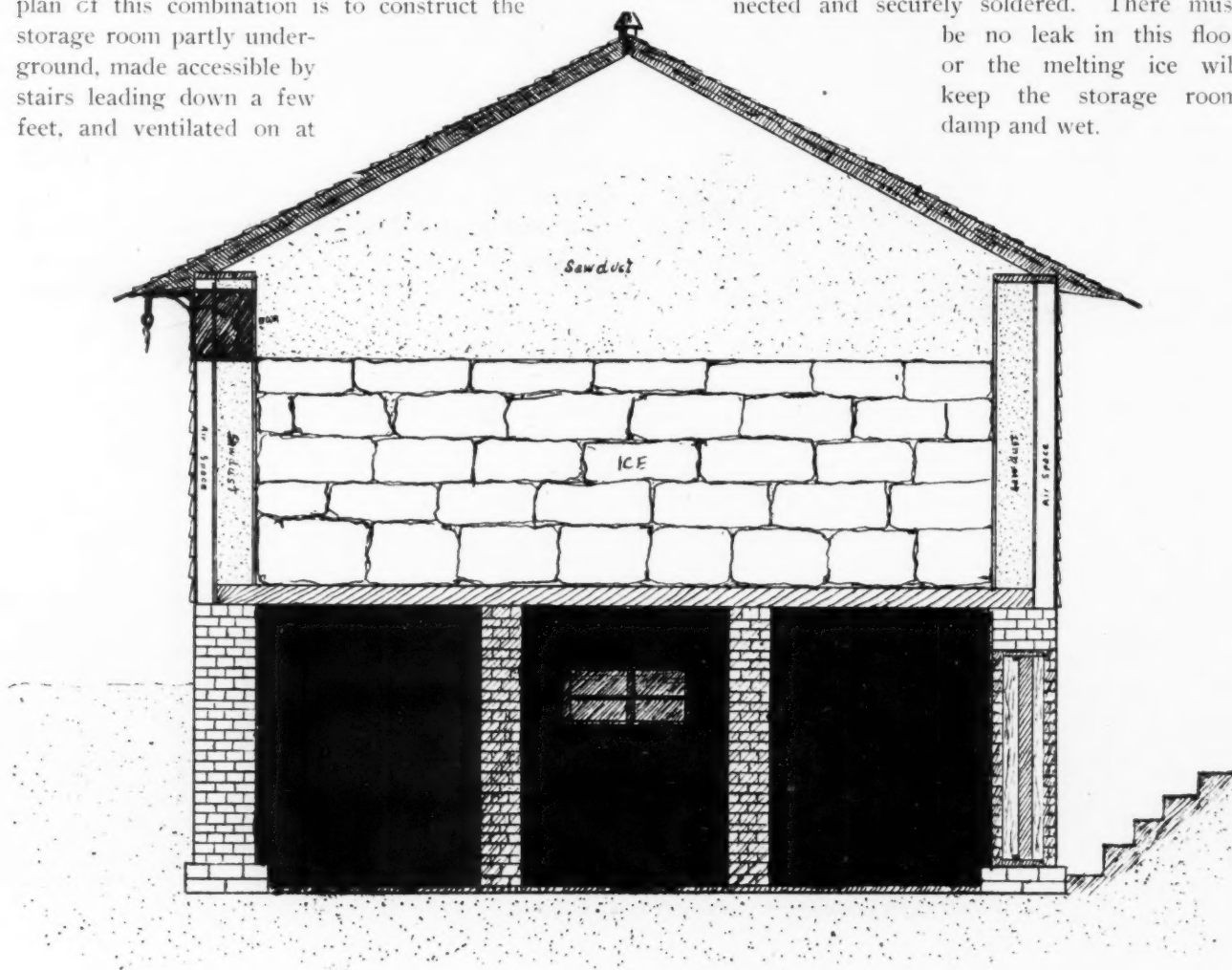
stone. The air space left between the outer and inner walls will thus protect the ice from atmospheric changes. The roof of the ice house is made of shingles placed in the ordinary way. The door is framed with wood and made of double thickness, or with an outer and inner door.

A combination ice house and storage plant is an improvement upon many of the old-fashioned houses, and for dairy purposes it has great advantages. The plan of this combination is to construct the storage room partly underground, made accessible by stairs leading down a few feet, and ventilated on at

middle of the underground storage room to support the heavy load of ice overhead.

Heavy wooden beams are laid across the foundation to support the load of ice. These are nailed together, and sheathed top and bottom with unmatched lumber. As the floor of the ice room must not leak it is essential that a galvanized iron or copper flooring be spread over the top and turned up a foot at the edges and corners. At each corner the drainage pipes are connected and securely soldered. There must

be no leak in this floor or the melting ice will keep the storage room damp and wet.



Combination Ice and Storage House

least two sides by windows. The ice is stored directly above this room, and can be reached at any time from the upper door where the ice is first put in. The mere keeping of the ice renders the storage room cold without any great loss of good material.

To construct such a combination storage house and ice house, an excavation should be made eight feet below the surface, and of the required dimensions other ways. The bottom of this excavation is filled with cinders and gravel, and on top of this a firm concrete floor is placed. At the four corners openings should be left for drainage pipes to run from the ice above. The chief thing is to keep this floor dry and sanitary. Foundation walls of stone, brick or concrete are next run up two feet above the surface of the ground. If the house is more than 8 by 8 feet in dimensions, a row of posts should run down the

In building the foundations window spaces must be provided on at least two sides or three sides, with the door on one. The windows should be double sash so the temperature of the storage room can be regulated for any weather. The entrance should likewise be provided with an outer and inner door. A door for putting the ice in should be provided just under the roof, where the only access to the ice is possible.

The advantages of this combination are many. A supply of ice can be kept as in the ordinary ice house, and a good cold storage room is provided at all times. The ice overhead will chill the storage room, and if proper ventilation is provided it will be kept clean and sweet at all times. Dairy products and fruits and meats can be kept in this storage room. It is like having a huge ice chest provided without cost or inconvenience. The added first-cost is slight.

# STEEL SQUARE

ALFRED W. WOODS

## How to Use the Steel Square

ILLUSTRATING VARIOUS METHODS FOR OBTAINING MITER CUTS BY AID OF THE STEEL SQUARE FOR FRAMES AND HOPPERS—THEIR RELATION TO THAT OF HIP AND VALLEY ROOFS

LAST month we showed the angles and the application of the steel square for six of the polygons,—others may be found in the same manner. Therefore, we will not take up time or space in illustrating more of them, but will call attention to another kind of miter, usually called hopper cuts. This is an angle that unnecessarily puzzles many carpenters; the experienced roof framer fully understands it because it comes up in every hip and valley roof when joining the roof boards in the valley or over the hip, though this does not require a close fitting joint and is usually made by the cut and try method; if a close joint is obtained, it is all right, if not it does not matter, further than the looks, because it is covered up. However, a fairly tight joint in this kind of work may be had without the use or knowledge of the steel square, or any instrument other than the hand saw, by simply sliding the end of the

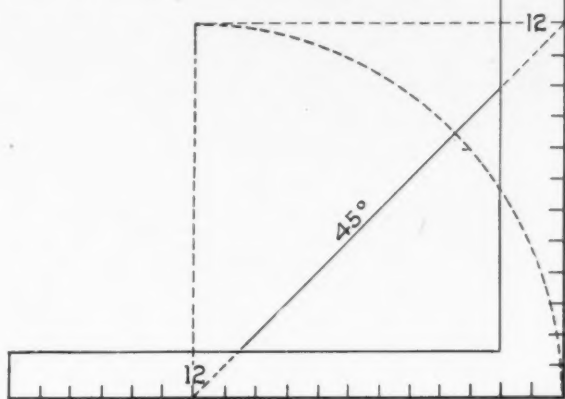


FIG. 209.

board a little past the edge of the hip and by cutting close to its side. In that way the hopper cut is often unthinkingly made. This may be easily explained by taking the ordinary square hipped roof, as usually seen on a cottage. Now suppose the roof be inverted; it will be seen that it forms a perfect hopper on a large scale.

Hoppers are usually made with square corners or four sides, there being but little demand for any other

shape; but the principle that we are going to illustrate applies to the three, five, six or any other polygonal shaped hopper. There are many carpenters who think they thoroughly understand how to make a square hopper, but when asked to frame any other shape are utterly lost, which goes to show that they do not understand the true principle involved.

In Fig. 200 were shown the figures to use on the steel square for eight of the polygonal miters,—that is, for the joining of the sides lying flat; in other words, without pitch. If there is no given pitch, then the sides would be vertical and would simply be a box with mitered corners, but these figures furnish

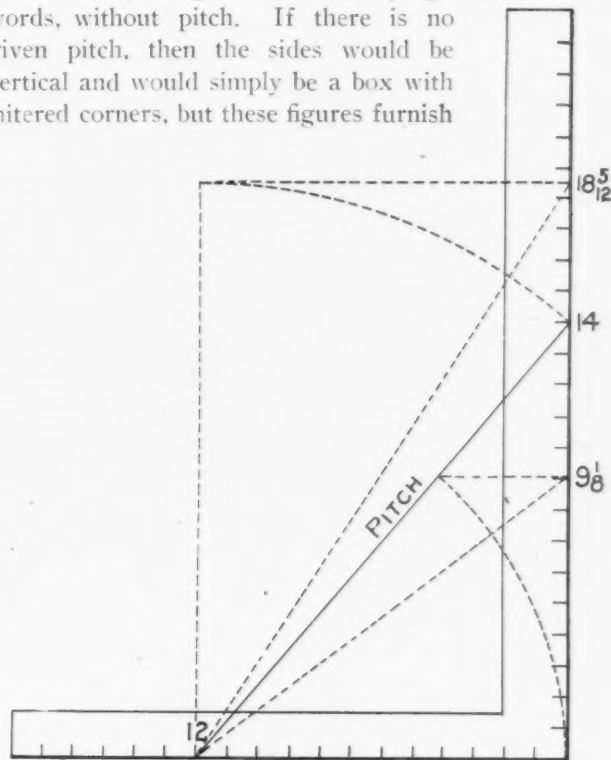


FIG. 210.

the foundation for a hopper box with flared sides.

For illustrative purposes, we will first take the square cornered hopper. Now with 12 on the tongue as center, draw an arc with the same radius from the heel to the point directly above the center and square over to the blade, as in Fig. 209. 12 and 12 will give the miter for a square cornered box. Now, suppose there is a pitch, or flare, of 14 inches rise to the foot. Lay off a line from 12 to 14, as shown in Fig. 210,



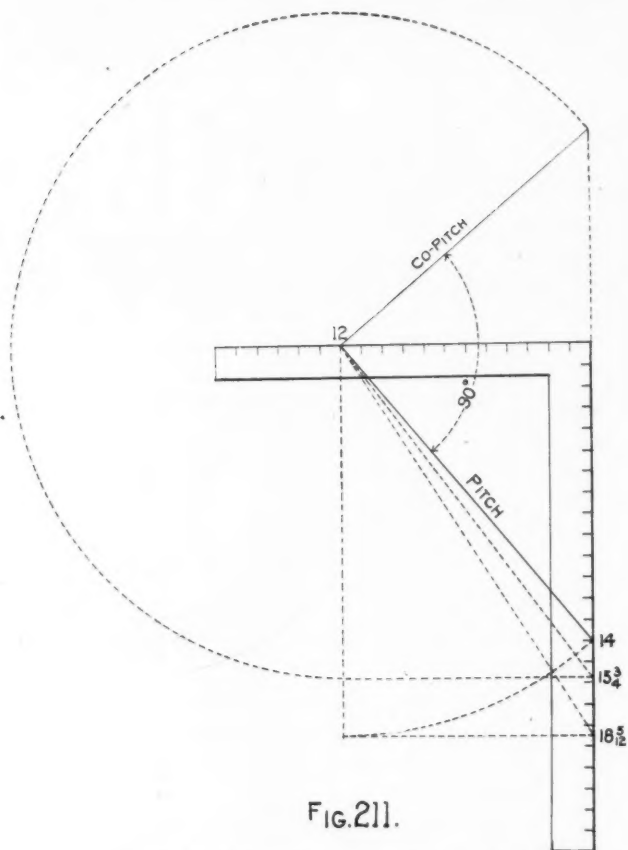


FIG. 211.

with radius as before, and at the point where the arc intersects the pitch, directly above the tongue taken on the blade, as at  $9\frac{1}{8}$  and 12, the blade will give the angle for the cut across the square edge of the board. However, there must be another bevel across the face of the board to give the required flare for the hopper. This is found by taking 12 on the tongue and the length of the pitch line (which is  $18\frac{5}{8}$  inches) on the blade and the tongue will give the angle. These figures are the same as would be required for the side cut of the jack for roof of like pitch, but in this case the blade gives the angle.

Now we will give another method of finding the miter. In all roofs and hoppers there is an unseen pitch, which we will call co-pitch. Assuming that the edge of the board is square, the co-pitch would stand at an angle of 90 degrees with the given pitch. See Fig. 211.

The rule given in Fig. 210 for the face angle, will apply to the miter, but instead of using the length of the given pitch, substitute that of

the co-pitch and by referring to Fig. 211, it will be seen that this is  $15\frac{3}{4}$  inches on the blade.

Now, for proof, see Fig. 212; 12 and  $9\frac{1}{8}$  first method, and 12 and  $15\frac{3}{4}$ , second method. The blade gives the angle in the former and the tongue in the latter.

In Fig. 213 is shown all that is contained in the former figures with an additional angle for the butt joint, which is a continuation of the co-pitch to a

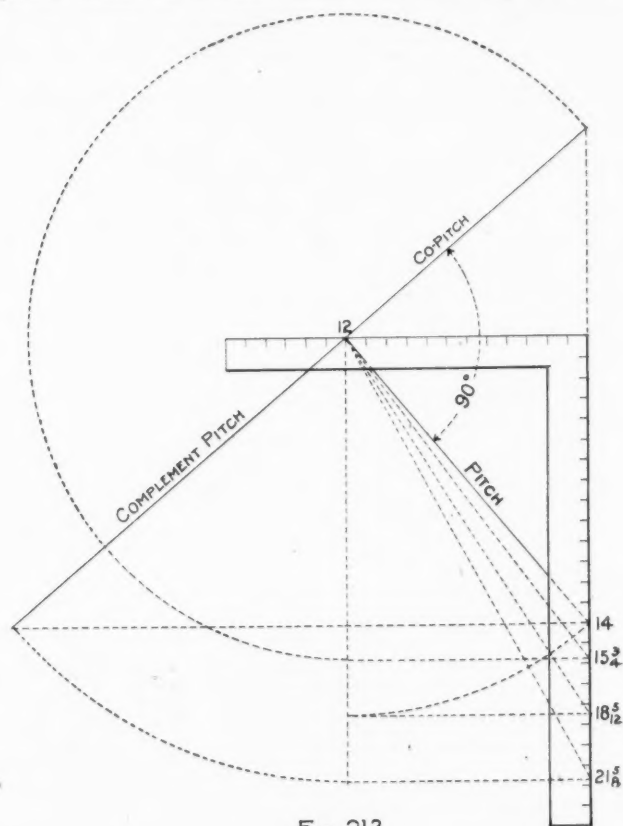


FIG. 213.

point on a level with the starting point of the given pitch. This we will call complement pitch. The length of this pitch (which is  $21\frac{5}{8}$ ) transferred to the blade, will give the angle for the butt joint, the tongue giving the angle.

Before going further, we wish to show another method of obtaining the hopper miter with the aid of the steel square. Taking the 14 inch rise to the foot, as shown in Figs. 210 and 211, it is the length of the pitch transferred to the blade and the rise transferred to the tongue. The latter will give the angle.

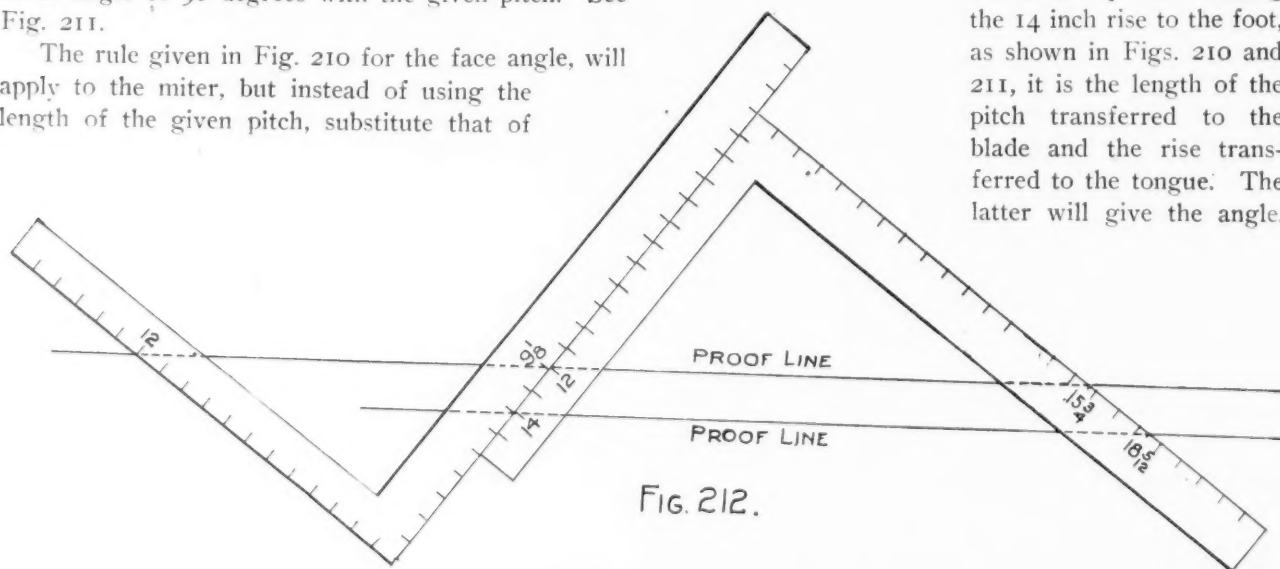


FIG. 212.

# PRACTICAL CARPENTRY

## Saw-Tooth Roof Construction

THE FIRST OF A SERIES OF ARTICLES ON STANDARD MILL CONSTRUCTION DESIGNED TO PREVENT HEAVY LOSSES BY FIRE

THE great advantages and the increasing use of saw-tooth roof construction, together with the lack of familiarity with it in many sections, make it desirable to outline here its important features.

Two typical designs are illustrated—one a textile weave shed with good basement for shafting for driving looms, on main floor above, thus dispensing with the overhead shafting and belting in the weave room; the other a design for a light machine shop or foundry. Other designs are applicable with light wooden trusses or reinforced concrete.

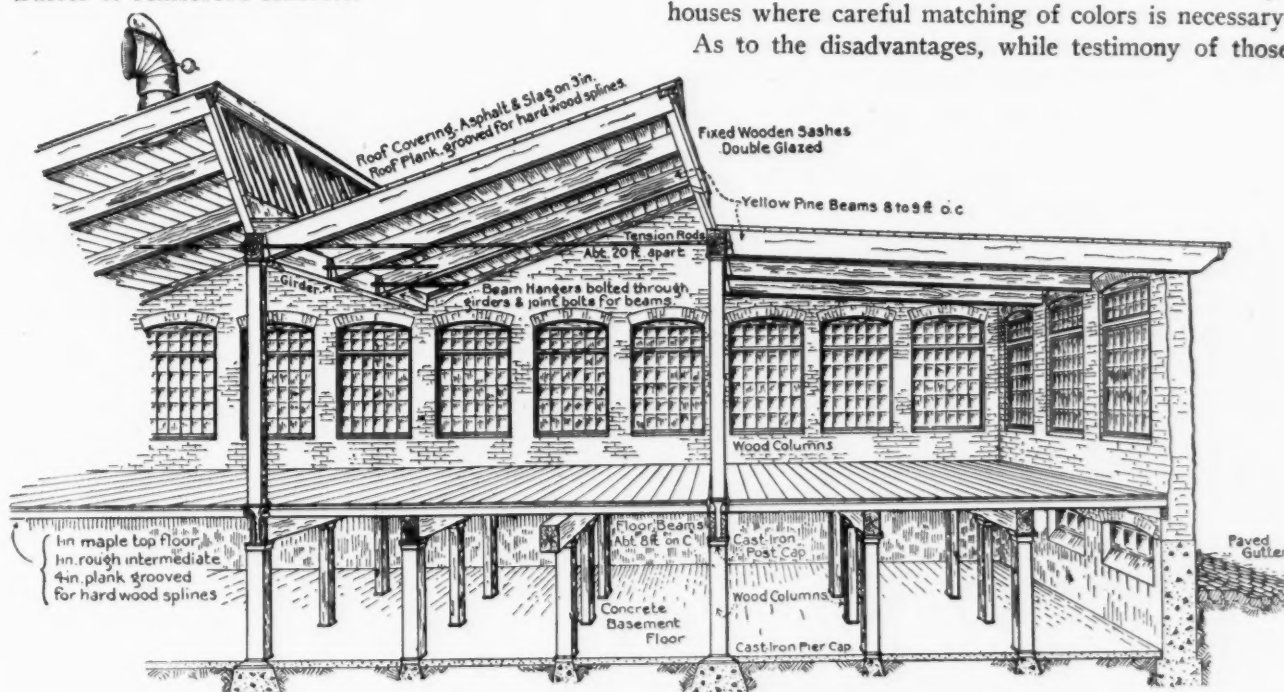
the very desirable north light in all sections.

Economy in lighting, in that they lessen the fixed charges due to the lessened number of hours per day during which artificial light is necessary.

Better working conditions, especially in textile mills, therefore increasing production and encouraging permanency of the help.

The saw-tooth form is especially adapted to weaving and similar processes in textile factories, machine shops, foundries doing light work, and similar work, such as assembling and drafting, and in some dye houses where careful matching of colors is necessary.

As to the disadvantages, while testimony of those



The important advantages of this form of roof construction are:

Uniform diffusion of light throughout the room, thus making all space in it available. With all interior surfaces painted white and with ribbed glass in the sash, the diffusion of light is almost perfect.

Adaptability for lighting large floor areas in wide buildings with low head room compared to what is necessary in wide buildings with the ordinary form of monitor skylights.

They provide the true solution to the problem of excluding the direct rays of the sun and obtaining

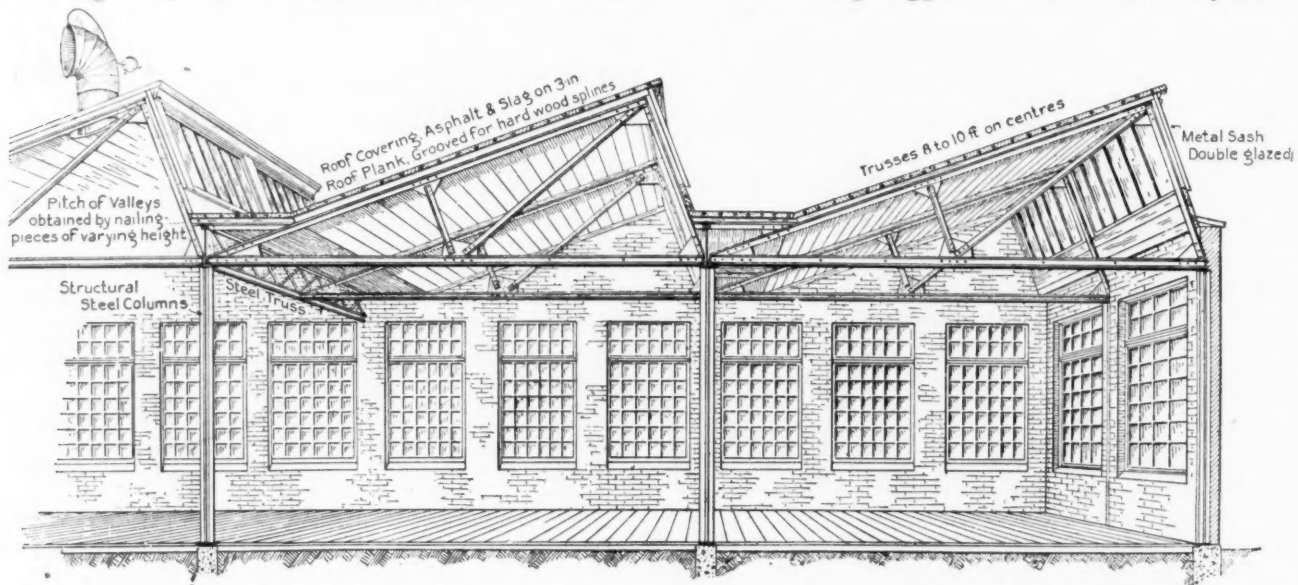
having had experience with saw-tooth roofs is almost uniformly favorable, more or less difficulties have been experienced. Practically all of it, however, may be summed up as due either to faulty design or poor workmanship. The difficulties in general are caused by leaks, due to severe conditions during winter in our northern climates, poor ventilation, excessive heat when roofs are thin, or excessive condensation on underside of roof and glass when the temperature outside is low and there is considerable moisture in the rooms.

It may here be well to state that the light roof of

2 inch and 3 inch joists and boards should never be used, and that, while the principles of slow burning or mill construction, with the heavy timbers, are preferred, the increasing difficulty of promptly obtaining yellow pine lumber of good dimensions, and its increasing cost, often necessitate the use of trussed

posts are nearly always available and should be given preference, but if light steel columns are necessary they should be well protected by insulating materials if in rooms containing combustibles, as the column is the vital part of the roof support.

The following suggestions show the best practice



forms, using rather light timbers. In no case, however, should they be less than 6 inches in width and of depth sufficient to carry the load, this in order that they may be "slow burning." The roof in all cases should be of plank with wide bays.

The adaptability of the light forms of steel for framing trusses, especially when wide spans are needed, often compels their use; and in plants having safe occupancy, such as metal workers, they are not ob-

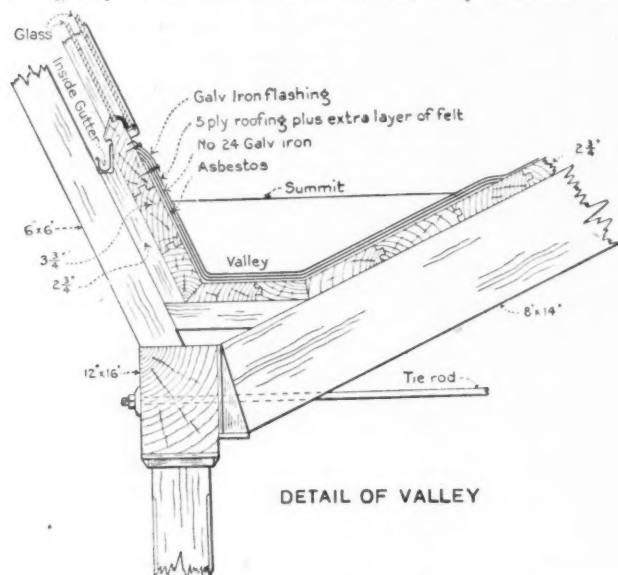
in saw-tooth roof construction to overcome the difficulties and to make it a thoroughly satisfactory piece of work. What is good engineering from the viewpoint of the manufacturer can also be good fire protection engineering. Any design should be adapted to both if the best interests of the manufacturer are to be served.

It being desirable to avoid direct sunlight and at the same time obtain abundance of light perfectly diffused, the saw-teeth should face approximately north; and the glass should be inclined to the vertical, to take advantage of the brighter light in the upper sky, and to prevent cutting off the light by the saw-tooth immediately in front. This also assures the diffusion of the light upon the floor rather than on the under side of the roof planking.

For the glass an angle of 20 degrees to 25 degrees with the vertical, and an angle of approximately 90 degrees at the top of the saw-tooth will be about right, the variations to depend on the amount of light required and the latitude. A sharper angle at the top is not needed, as it increases the cost, there being more roof to cover and larger spans. More glass is also required in proportion and the light is not as good, more sky light being lost and too much thrown on under side of roof.

Double glazing with space between is preferred on account of its conducting qualities, but is not always necessary, except in the north country. The inside glazing should be factory ribbed glass, with ribs vertical and inside. Shadows cast by trusses are then almost unnoticeable.

Condensation gutters, as shown in the detail drawing, are needed inside at the bottom of the sash, and they should be drained through inside conductors and

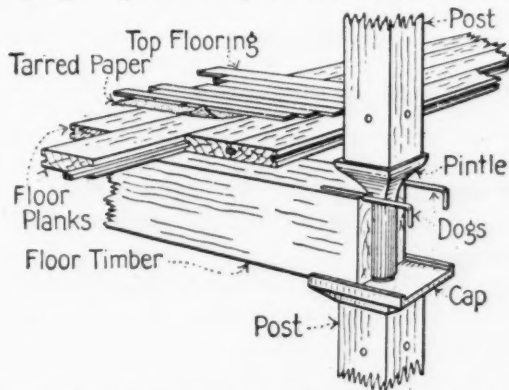


jectionable, providing adequate sprinkler protection with good water supply is available to prevent quick failure of the steel work, due to heat from combustion of contents or roof. Similar protection is, of course, needed in shops with wooden trusses if disastrous fires are to be prevented, but experience has shown that the steel-trussed roof will fail much quicker than would one of wood under similar conditions. Wooden



not to the outside under bottom of the sash, as these latter admit cold air and are liable to freeze.

Valleys between the saw-teeth should be flat, 14 inches to 2 feet in width and pitch one-half inch per foot towards the conductors, which should be of ample size, and not much over 50 feet apart, preferably less. The necessary pitch may be obtained by cross pieces of varying heights on top of the trusses, thus avoid-



**Cast-Iron Cap and Pintle for Columns and Dogs for Holding Floor Timbers Together**

ing hollow spaces. Leaks, a common fault, may ordinarily be prevented by careful design of gutters, valleys and sashes, and by insisting on good workmanship and materials. The roof covering of asphalt or pitch should be continuous through the valleys and extend up to the glass.

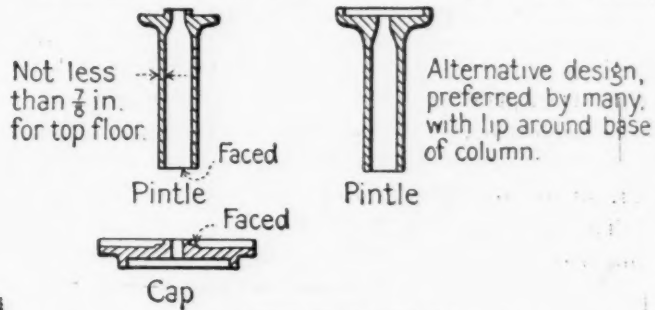
Experience has demonstrated the advantage of a combination of direct radiation with a fan sufficient only for ventilation and tempering the room. Heating pipes should usually be placed overhead and directly under the front of the saw-teeth and run the entire length, and in this position assist in preventing condensation. Where there is no moving shafting, some forced circulation is necessary, and is best obtained by fan, often driving air from a dry basement or outside as required, and discharging it over heating coils to the floor above. In weave and similar rooms is this especially necessary and advantageous in promoting health and comfort of employes, making greater efficiency possible. Ventilation and cooling of these large areas with comparatively low stories must not be neglected. Ample vents are needed at top in shape of large metal ventilators with double walls and tight dampers. They are recommended instead of pivoted or swinging sash, which are apt to leak in driving storms, and when open allow dirt to blow in off the roof. Good windows are advised in side walls and experience has shown their value.

Framing of the saw-teeth may be in the timber, steel or reinforced concrete. The design should be such as to obstruct the light as little as possible and strong enough to hold wet snow without sagging, and stiff enough to carry shafting motors, etc., when they are to be overhead. When wood or steel is used the roof planking should be 3 inches or over, spanning wide bays of 8 to 10 feet.

Hollow spaces in roofs should not be permitted.

They are very undesirable from a fire stand-point and any condensation which may take place in them during cold weather soon rots both plank and sheathing.

Sheathing, even without spaces behind it, is more or less a bad feature, as it is readily combustible, but if used should be applied directly to the under side of the roof plank, with only a layer of some insulating material between, so that there may be no concealed space. If 3-inch plank is sufficient for a flat roof, it should be for a saw-tooth, and with good circulation of air there should be no trouble except in wet rooms,



**Cap and Pintle Cast to Fit Columns**

where condensation is bound to occur, whether under a roof or the floor of the room above, unless large quantities of dry air are discharged into the room.

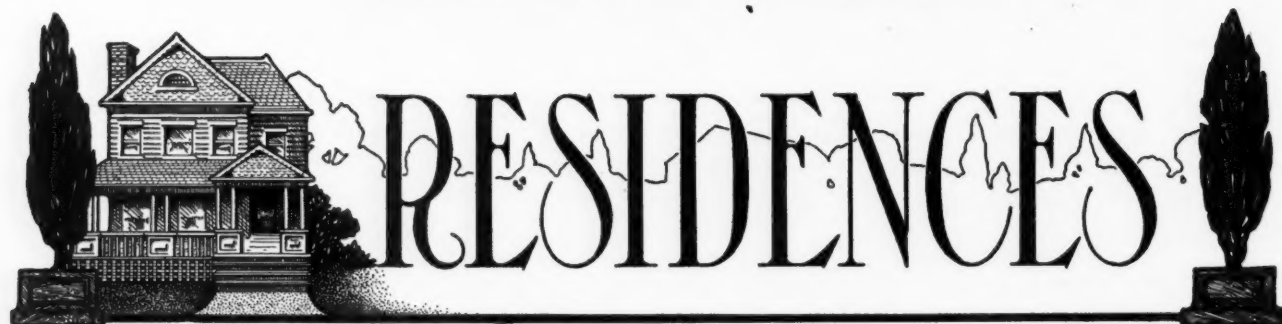
Saw-tooth roofs necessarily cost more, as there is practically the same amount of roofing as in flat roofs, and in addition there is the cost of windows, glazing, flashing, conductors, condensation gutters for the skylights, and a somewhat larger cost of heating. The additional cost of these items does not, however, fairly represent comparative cost, as there should be considered the total cost of the building compared with ordinary one of sufficiently high stories and narrow enough to give the required light. When this is done the slight additional cost is far outweighed by advantages of the type for work where good light is desirable.



### Will Erect a Revolving House

William Reiman, a New York jeweler, has had plans drawn for a revolving house, which he will build at Bayside, Long Island. Mr. Reiman's Bayside home will be the result of many years of thought over the matter of genuine home comfort, for he has often declared that with the advantages of modern appliances and electricity there seems little reason for the sunny side of a house being in the sun all summer and the shady side being in the shade all winter.

Mr. Reiman would have a home, the windows of which may follow the sunshine in the winter, or avoid it in the summer. The architect has studied the problem and has completed plans for such a house, which will be built at a cost of \$35,000, exclusive of the real estate. As proposed, the house will be constructed on a turntable which will be operated by electric power. The owner, in his library or bedroom, may press a button and the house will swing to right or left, as he may desire at any time.



## Artistic House Designs

SKETCHES AND WORKING DRAWINGS OF PRACTICAL, ATTRACTIVE COTTAGES AND SMALL HOUSES—  
MATERIALS AND CONSTRUCTION SHOWN

**T**HIS plan for a one story cottage bungalow, designed by C. Bryant Schaefer, while having but four rooms, is so arranged as to have all the advantages of an eight room house.

The living room is large. It is suitable for a sitting room in front, a dining room in the middle and

other provision is made for heating they may be warmed from a heater in the living room, placed near the entrance arch.

The front piazza is connected with the side porch. The stone work before the latter forms a basis for a screen of vines. A carriage stoop projects here that



A BUNGALOW DESIGN.

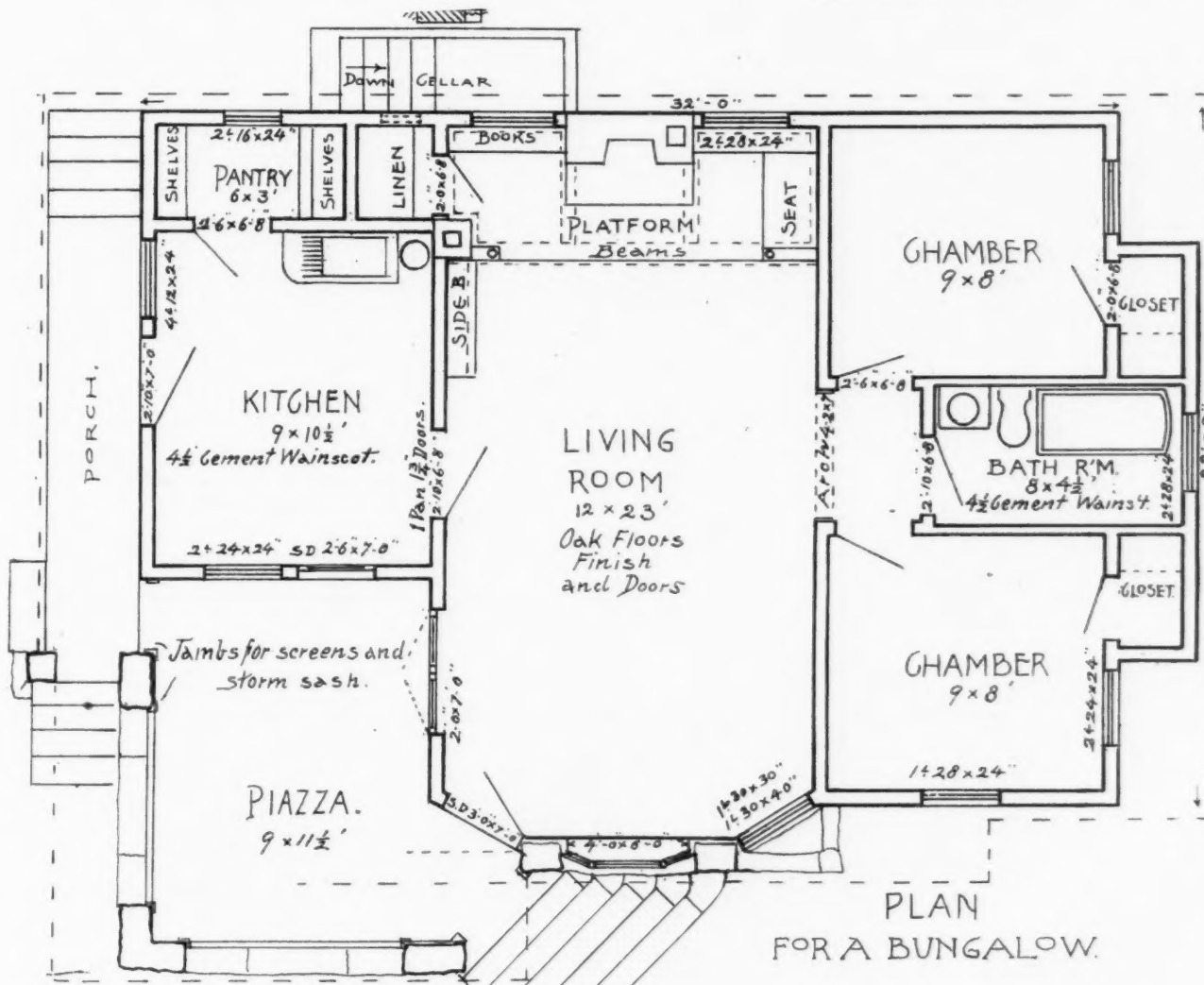
a fireside nook at the back. The whole arrangement forms a very attractive grouping.

Casement doors also open from the living room onto the piazza. Here refreshments can easily be served from the kitchen. This makes the piazza with screened openings one of the most enjoyable features of the house.

The chambers and bath room are grouped apart from the rest of the house. This allows their use without disturbance from the other rooms. If no

is accessible from front or side doors. A cellar is shown with an outside entrance. The loft is entered through the gable. It is worth while to have a well planned cottage finished in hard wood. The sash and doors should be thick. The foundations may be of concrete or rubble stone.

When it comes to the question of building a house much depends upon circumstances. The mode we hear least about nowadays is to build by accumulation. A person should be enterprising and look about him.







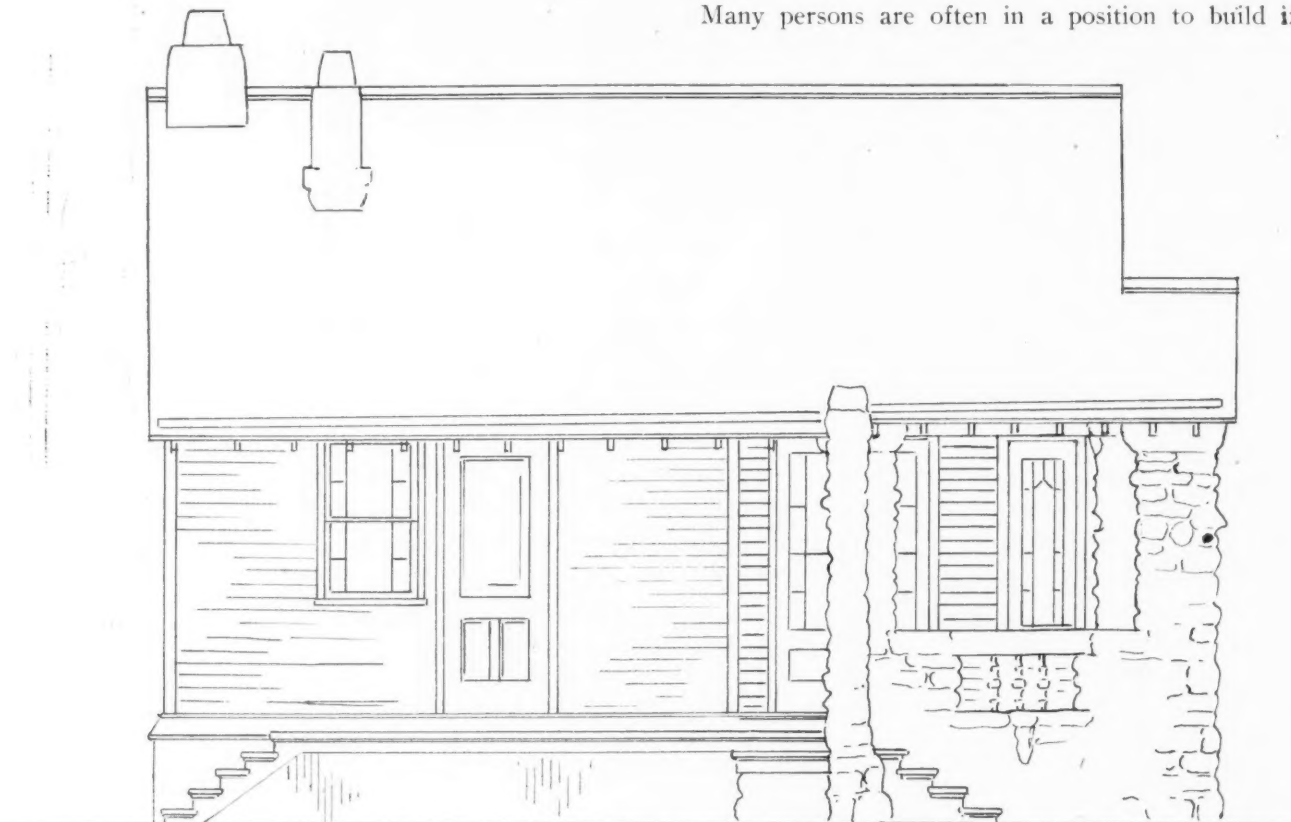
Front Elevation

There may be pasture rock, sand or gravel on his own premises, possibly some timber also. It should be used as far as it will go. The old idea that there must be sufficient material of one kind for a house has passed away. Adapt the design to the means.

In this cottage the stone has been used in the porch and bay window with picturesque effect. There might be more of it or less without harm. If but few large

stone come to hand they may be sorted out for the corners and the small pieces filled in between. Cobble stone panels may be made, even concrete introduced, just to make use of the materials available. Even paving brick, common brick or tile may be mixed in successfully if some orderly design is carried out. Cement on lath does well in the gables. A log or heavy piece of timber may also be made an effective feature.

Many persons are often in a position to build if



they will make a beginning at collecting and saving the materials. They will be surprised how it starts things their way. It is money invested and advertising to them, and a good return for the time employed.

working drawings including details of interior finish of this house. It is of the style which, while neither costly nor elaborate, always makes a satisfactory, home-like dwelling.



In the end they may engage some builder with whom, in the meantime, they have become acquainted. An intelligent builder who can recommend this mode of procedure is sure to increase his list of customers.

#### **An Attractive House**

On this page is shown a perspective view of a very roomy, well-arranged house of substantial frame construction. In connection with it are given the complete

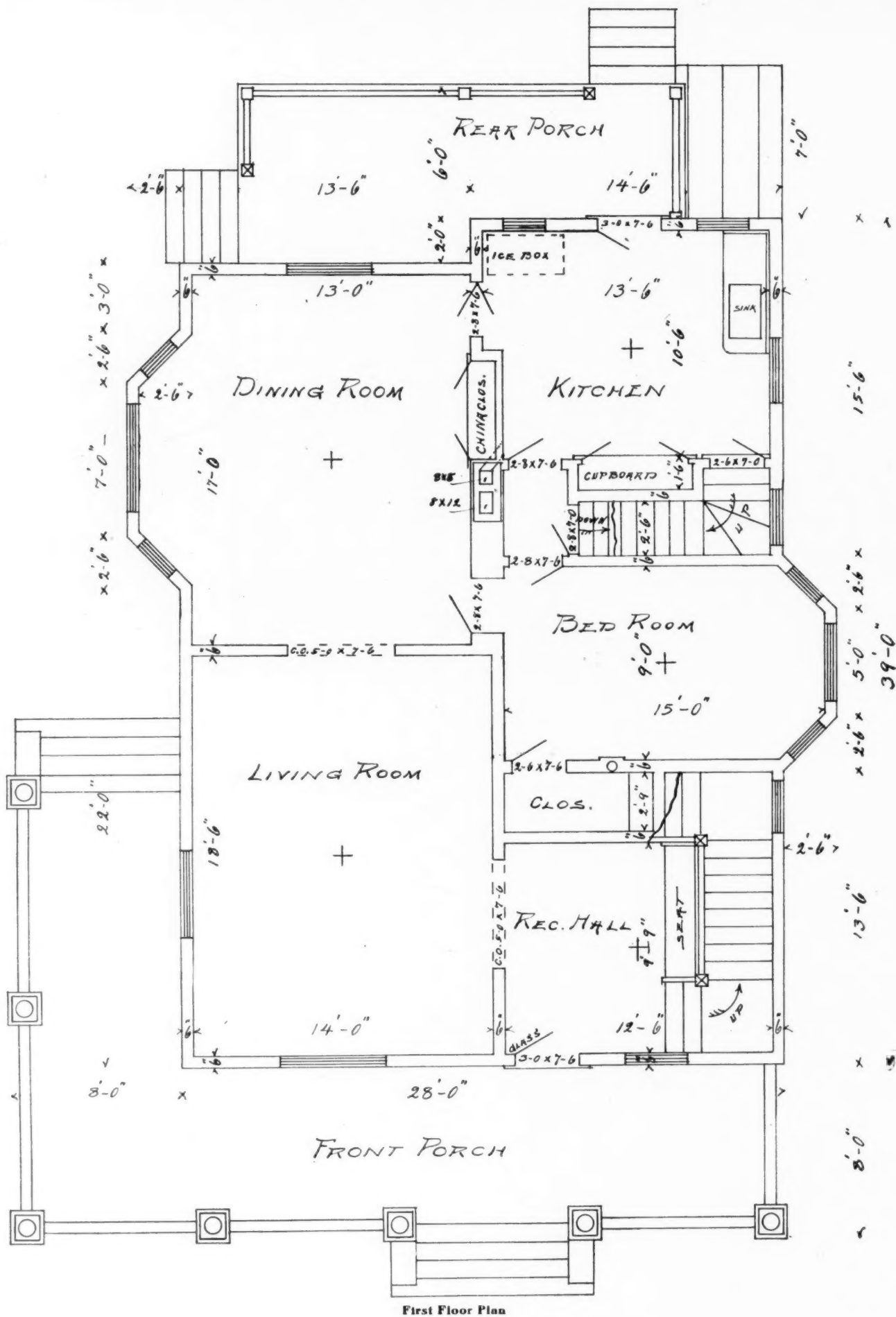
The first floor contains four rooms besides the reception hall. The living room and dining room are both good size and well lighted. They are connected by a cased opening 5 feet by 7 feet 6 inches.

The kitchen is well located and well equipped. The bed room on the first floor is a very good feature.

Front and back stairways lead to the second floor. Four large pleasant bed rooms, each with good closet



LEFT SIDE ELEVATION



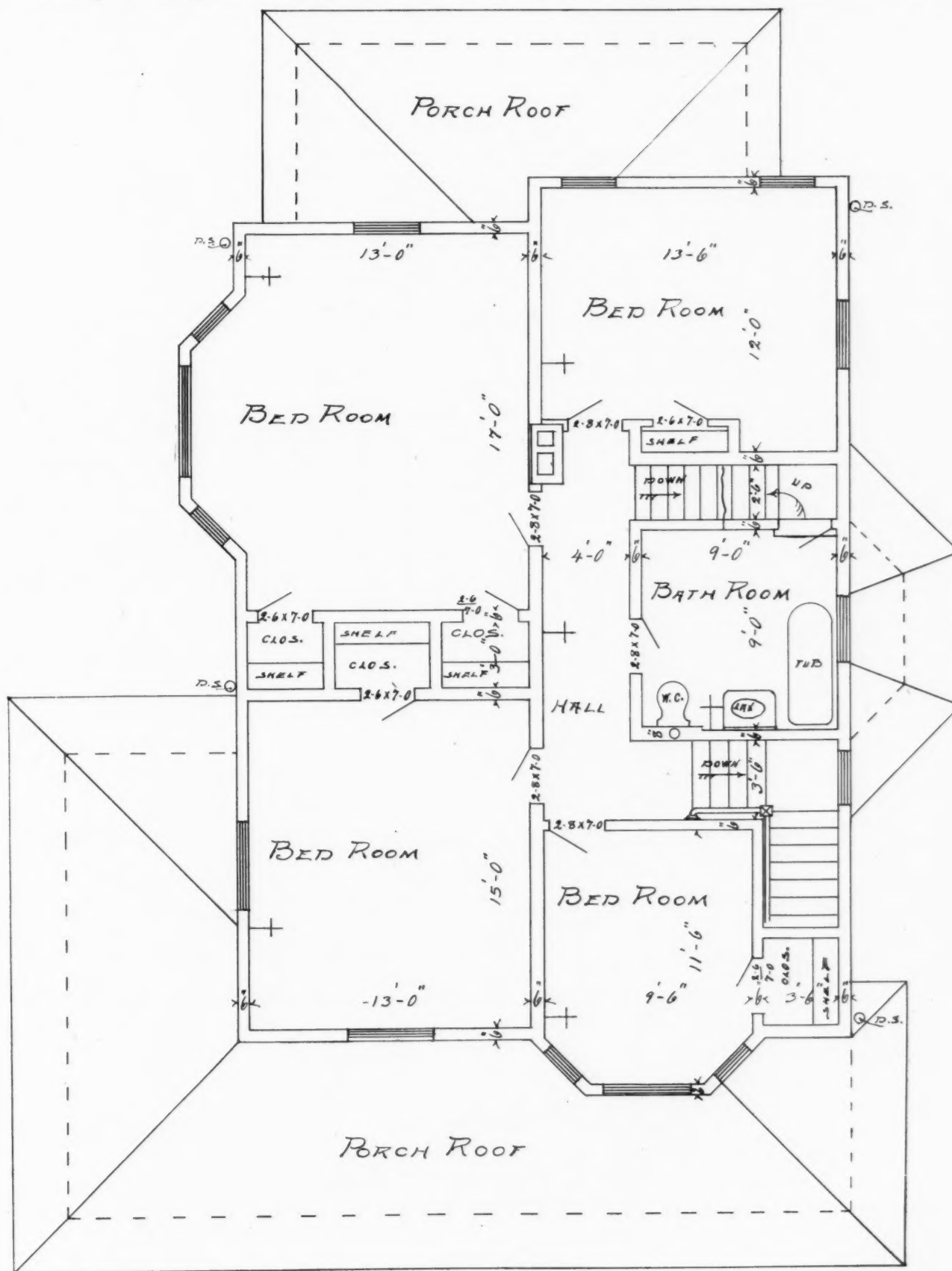


space, are provided. The bath room is conveniently located.

### Chicago's Building Boom

Building in Chicago is on the boom. The rec-

ords of all the city building departments show the month of June to have been a banner one. Not since June, 1894, has there been such activity in this direction. Furthermore, the gain in construction has been steady since the opening of the present year. For this



Second Floor Plan



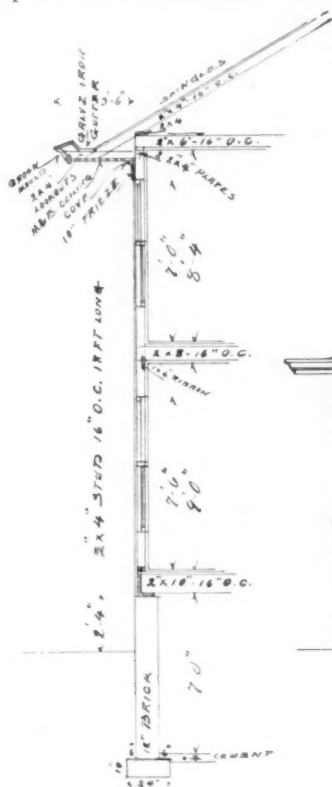
RIGHT SIDE ELEVATION

period of six months, also, all records since 1894 have been exceeded.

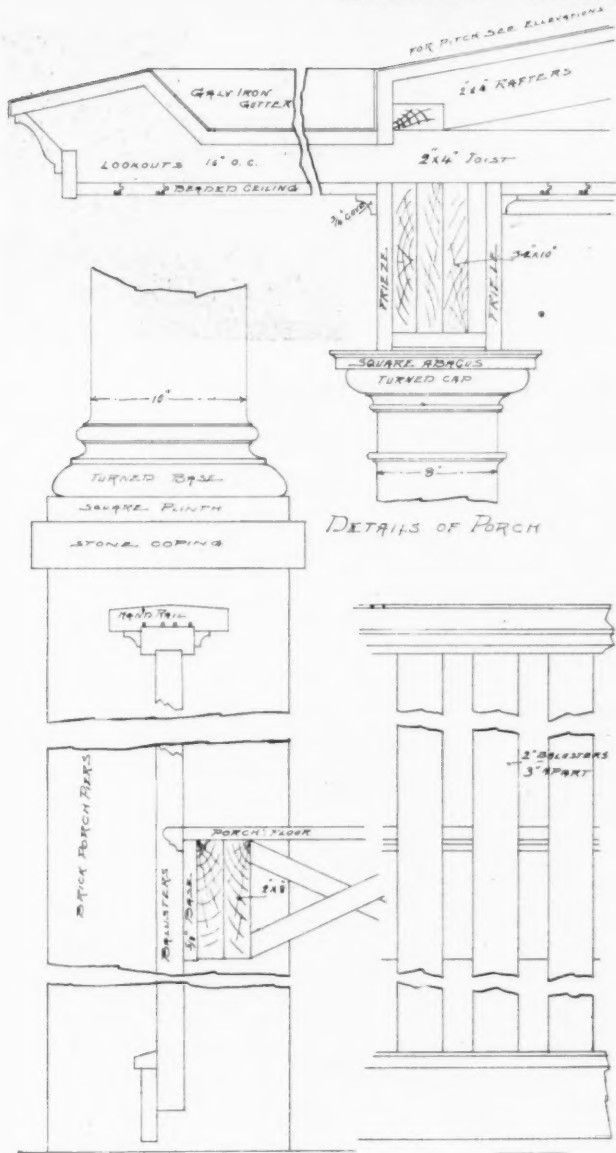
The cost of construction for the six months is given as twenty-nine and a half million dollars. The total is smaller than for the same period in the last three years. The frontage space likewise was greater in 1906 and 1907. With these exceptions conditions have been more favorable than since 1893.

In examining the statistics the officials of the building department note that much of the construction is going on away from the congested parts of the city. While there are more buildings erected, they are of cheaper character, the location playing an important part in the economies.

But dry statistics are not needed in order to get the impression of building activity. A ride on elevated road, or street cars a few miles from the business center, in automobile or carriage, shows the new buildings everywhere. The scrapers are moving dirt. The little sheds of the contractors and the piles of material block the streets. The busy laborers swarm upon rapidly growing apartment houses and private residences.



FRONT ELEVATION



What the eye sees everywhere in Chicago now is evidence that the advice of the wise that *now* is the time to build is being taken by many. Materials of all kinds are to be had at much lower prices than formerly. Labor is willing and anxious for employment at satisfactory wages. The man who wants a building loan is readily accommodated. It is a condition of affairs which is full of satisfaction and encouragement to all the building trades.



### American Tool Opportunity in France

Consul D. I. Murphy, writing from Bordeaux concerning the introduction of American handsaws and screw-drivers in that section of France, says:

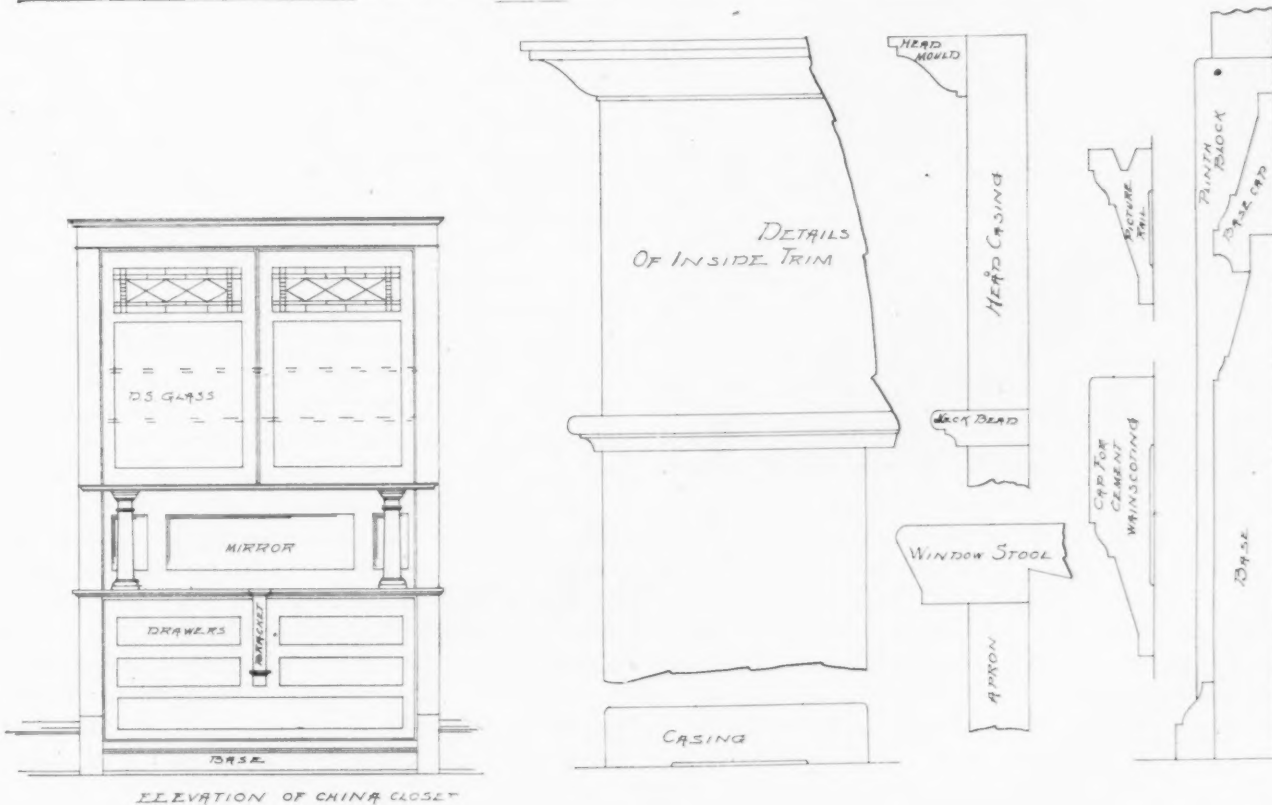
"American handsaws are not known here, the old-fashioned 'buck' variety being exclusively used. It seems as though American manufacturers might successfully introduce their saws in this region. Other American tools, the quick-acting screw-driver, for instance, might also find a ready market. At the American pavilion at the Maritime Exposition, which was held at Bordeaux from May 1 to November 10, 1907, an American handsaw and a quick-acting screw-driver, brought over by the packer of the Smithsonian Institution, were looked upon with admiration and wonder by the French workmen."



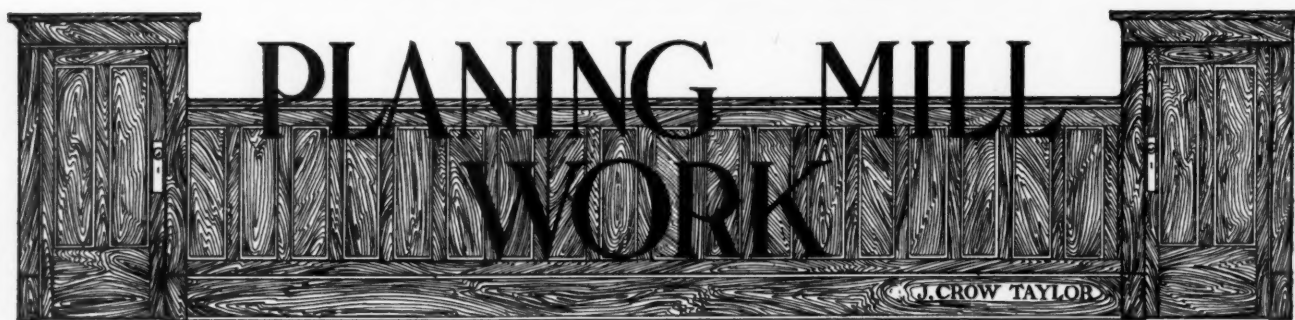
It is nothing unusual to see a boy take after his father, but it's always interesting to see the father take after the boy.



Sometimes a man can go to sleep in church and get away with the goods if he doesn't snore.







## Two Extremes In Equipment

THE ONE MOST USEFUL MACHINE FOR THE CARPENTER'S SHOP—OTHER IMPORTANT MACHINES—HOW THE SHOP SHOULD BE BUILT UP

**I**T IS a question to every carpenter, no matter whether he is just figuring on installing some machinery or whether he has some already in operation, to know when he has enough equipment to get the best results out of his shop. Some worry considerably about it, but others don't bother much. It is a problem also that is rather difficult to give advice on; one must understand all the local requirements to be in a position to pass on the possible needs of any given shop. It may be interesting in this connection, however, to study what we might term the two extremes. That is, the simplest and smallest equipment practical, and the other extreme of a completely equipped woodworking establishment on a small scale.

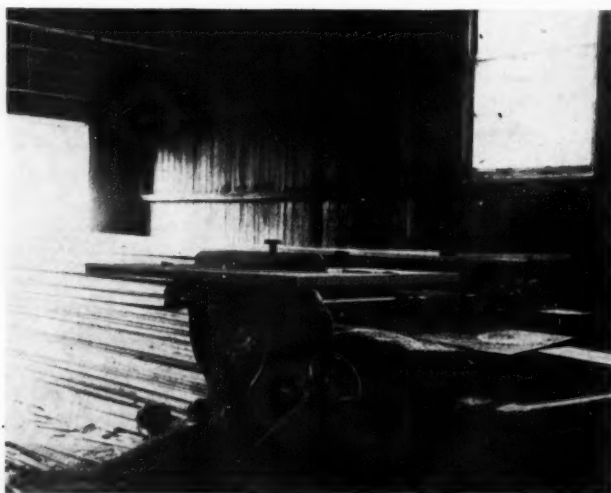
To begin with the small one first, we find that the simplest equipment in the way of a machine woodworking plant consists merely of a rip saw or a table saw, which may be a combination of a rip saw and cross cut. There are some who probably take issue on the point of this being the minimum equipment of

fault with either the band or the scroll saw, there are a lot of things that can be said about the little rip or table saw and its conveniences. There are old men at work in machine woodworking establishments who have studied thoroughly every machine going, and have said publicly that, if they had to give up every machine but one in the world, the one machine they would hang to would be the table saw or rip saw; because with this machine they can do more different kinds of work and get more help than from any other one machine.

First, let us consider the simple conveniences of the rip saw. One lumber yard man, it was found, had put in a rip saw primarily for the accommodation of his carpenters who frequently wanted strips of sizes that were not kept in stock. The saw proved a great convenience, not merely for this, but in various other ways; it enabled the man to rip cull stock and scrap stuff up into useful articles, to rip 2 by 8's into 2 by 4's when occasion required, and 1 by 8's into 1 by 4's, and do so many other things that it was called into use practically every minute of the day.

The carpenter who keeps a shop naturally carries more or less lumber in stock, and he has occasion for lots of ripping, crosscutting and working over of lumber into something else. Scrap stock will make bridging; and odds and ends of boards can be ripped into strips of various kinds.

These are simply the ordinary conveniences; by and by when we get down to work in the shop you can find use for a rip saw almost every minute. One really has to go into a big woodworking establishment, where a wide variety of work is being done, to find just how many different uses a table or rip saw can be put to. Its use for the grooving saw is quite common; and instances are known where people have actually tongued and grooved small lots of flooring with such a machine, using a single saw for the groove and two saws with a collar between them to make the tongue. In this work, of course, the saw is thicker than the ordinary rip saw; these same saws are made use of in cutting gains and for doing quite a wide variety of machine work on wood. Then, with the rip saw proper, and the use of various jacks and a sliding gauge or carriage on the table, all manner of shapes



The Machine to Start With

woodworking machinery for a shop, and place the scroll saw or possibly the small band saw as the preferred machine of minimum equipment. There is room for argument, too, in support of both these; especially in support of the small bandsaw, which can be made into a rip saw and crosscut or a scroll saw at will, and therefore will serve more of the purpose of a carpenter than anything else. Still, without finding

and bevels can be cut, and the work done better as well as more rapidly than it could be done by hand. In short, there is no one machine that can be made use of in more different ways than the table saw. If a man must limit his power driven shop appliances to one machine this is probably the best one to have.

There are times when it might be more desirable to use a small band saw; but, generally speaking, for the money it costs, there is nothing beats a table saw. They can be bought in every variety imaginable and in almost any size, and for any price from \$50.00 up. Some even cut the cost below this, purchasing simply a mandrel, journals and saw and constructing their own bench. It doesn't matter much how you do it, the cost of a rip saw is very small and comes generally lower than the cost of any other machine of equal usefulness. It doesn't matter whether it is for rough work or for fine joinery, with the proper equipment of saws and jacks to handle the stuff you can do the work equally well on the small machine.

Now, turning from the rip saw as a starter for a minimum of equipment for a machine woodworking shop, and going to the other extreme, that is, to a full complement of machines for doing such work as may be called for in the regular life of the average carpenter, we find need for about a dozen different machines. Possibly a few more or a few less, depending some on local conditions. Taking the machines in the order in which they would probably be selected and added to the equipment if one builds it up gradually, we may formulate a sample equipment as follows: Ripsaw, turning lathe, hand jointer or top smoother. This machine may be of a simple inexpensive type or may be one of those combination machines which can be converted into a half dozen different kinds of machines. In fact, there are times when you probably find a shop with this machine the central figure, and probably including only the three named here and possibly a scroll saw in addition. Continuing the list we find next a scroll saw or band saw (people's ideas differ here, some choosing one and some the other). Then would come a planer (some use the small smoothing planer and some planers of larger patterns for doing a heavier volume of work, so as to be equipped to do custom planing). Next in order would be a molder. This may vary in size and in type, but a molder or sticker of some kind enters in here to do odd sash and door work. Also special designs of molding now and then, as well as to dress small sticks. Next would be a mortising machine, of which there is almost an endless number, if you include all sizes and varieties. You can get anything from a little foot power mortiser up to the big giants used in the car shops, or the complicated automatic ones used for hub mortising. Generally the simpler types are wanted for shop work. Those of the reciprocating class have a wide range in the size of chisels used. Next, of course, would come a tennonner. Then there would come a shaper either single or double, depending on

the ideas of the owner and the requirements of the work. These, like the mortisers and the rip saws, are obtainable in various sizes and designs, so that every man can generally fit his own requirements. Along about this time the shop man will find need for a cross cut saw to keep company with his rip saw, and will probably take a light type of swing cross cut and erect a bench along one side or end of the shop to cut stock to rough length for working.

Then will come a sanding machine. Generally the first sanding equipment put to use is a small type of arm or disk sander, and afterward, if the work justifies, a drum sander of some kind is added. There are small ones especially designed for planing mill and machine woodworking shops of the lesser class. Along with all this will have to go a knife grinder, also door clamps and possibly two or three other light machines for some special work.

This gives an equipment on which one can make practically any and all kinds of special sash and door work; also do a wide range of mill work. In fact, can do all the work of the simpler type of houses and quite a lot of that which enters into the larger buildings, even including store fronts, and buildings of elaborate design. If mill work is entered into generally it will be necessary to add to this equipment some glue appliances and some veneer presses for putting up panels and for facing mill work with veneer, now and then.

The shop of the latter class, including practically a dozen machines, would constitute what might be called the maximum of equipment in a machine carpenter shop; and it might suggest to some to pass as a full fledged planing mill.

Now between these two extremes there may be found a number of happy mediums for different people in different parts of the country working under varying conditions. Always, however, the best thing to start with is a rip saw. If you feel like buying two or three more machines at the same time, go ahead. It would be better, however, to hold yourself in check a little so as not to overdo the thing in your early enthusiasm and later feel disappointed in your shop. What you want is not so much machines to do all your work as it is machines that you can use or work all the time, or at least enough of the time to get a good measure of profit out of them, to get help in your business and good returns for your investment. So take the minimum as a starting point and make your additions with forethought and your selections of machines carefully after getting catalogues from manufacturers of the different varieties, so you can figure out which will best meet your requirements.

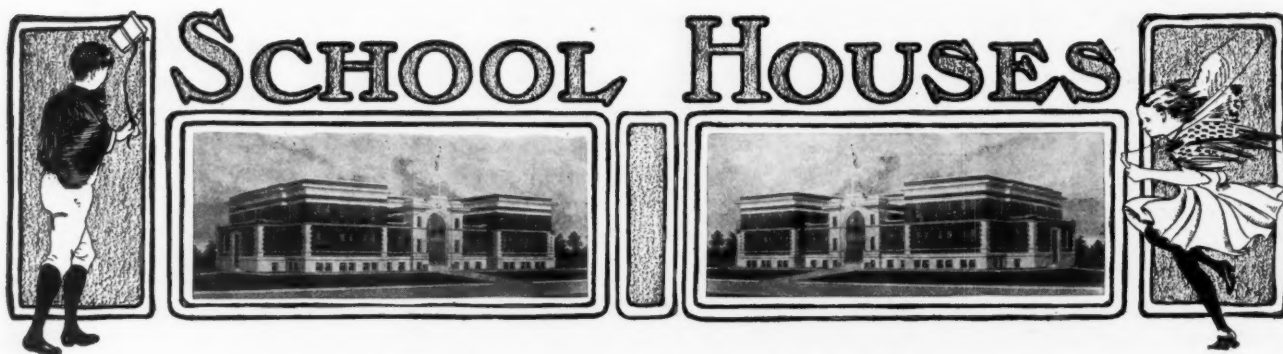


### At the Seaside

"O, George, can't you just smell the salt water!"

"More than that, Maria; I can taste it in the ice cream."





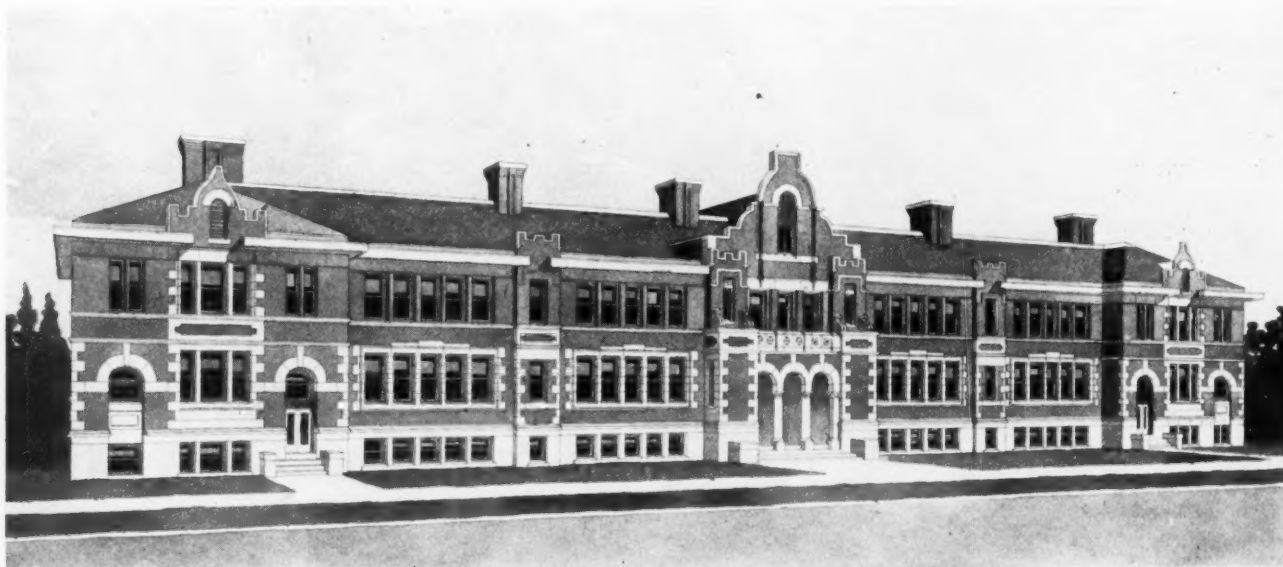
## Modern City School

PERSPECTIVE AND PLANS OF AN ATTRACTIVE WARD SCHOOL BUILDING, EMBODYING THE MOST MODERN IDEAS AS TO CONSTRUCTION AND ARRANGEMENT

**W**E ARE showing this month an especially interesting city school building, designed by Geo. W. Ashby, architect. It presents a dignified, attractive street frontage, being of the academic English order and the design carried out in brown

which by the way, is not a hardship. A glance at the plans of this school, will show how pleasant, well lighted and ventilated, and how conveniently located all the rooms are in such a building.

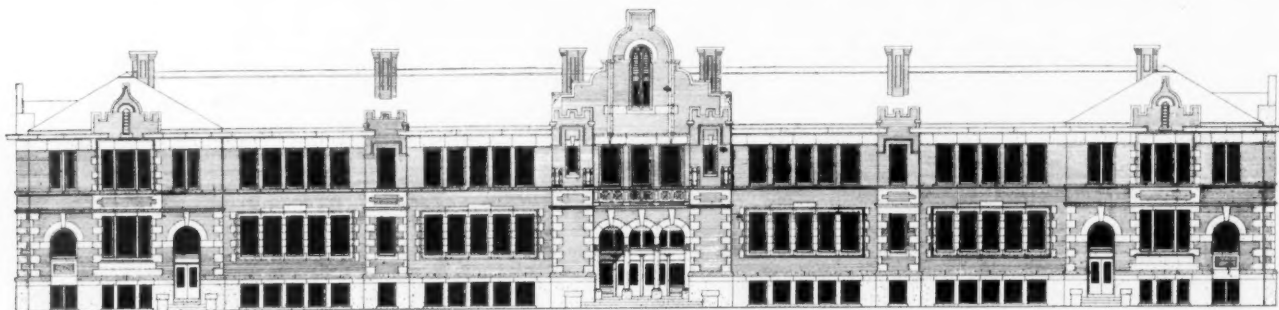
There are nineteen large school rooms altogether,



pressed brick with basement course and trimmings of Bedford lime stone. The roof is green slate. The appearance from the front is that of a much larger building than this really is. This is due to the broad but short ground plan used. In many city districts the only building site available is made up from a succession of city lots, extending back only 100 feet to the alley. This allows the school building to have a broad frontage but restricts the other dimension,

each with wardrobe. The school rooms are 25 by 32 feet; and the kindergarten is double that size. The location of this room for the little ones, directly by the entrance on the first floor, is very good. It is provided with a nice sunny conservatory for flowers, also with a storeroom for materials.

It is a very desirable feature of this design that so much room is provided on two floors; a three-story building is not proper for primary nor grammar school.



Front Elevation



The basement of this building is finished throughout and makes good provision for manual training and domestic science departments.

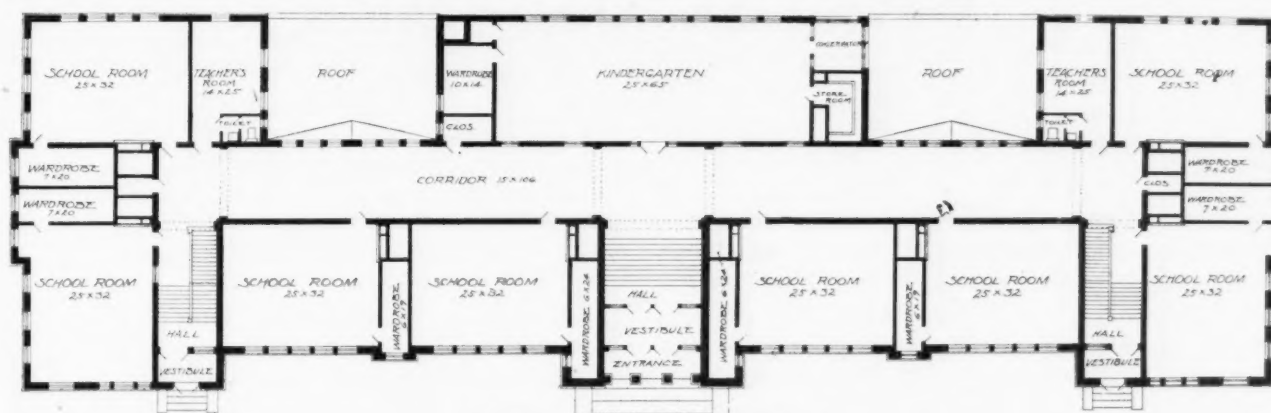
### Noiseproof Walls

Every builder is at some time or other interested more or less in what might be termed noise or soundproof walls and floors. It is always desirable to have floors and partition wall as non-productive of sound as practical, and there are several dif-

with felt, and the inner part composed of three layers with an air space. In the noiseless room sensations vary sometimes including a variety of body sounds, sometimes a feeling of pressure. A shell held to the ear no longer seems to give forth sound, the tones for which the shell is resonant being absent.

### Rose to the Occasion

A woman bather at Atlantic City got beyond her depth, and in her struggles her new false "puffs" be-



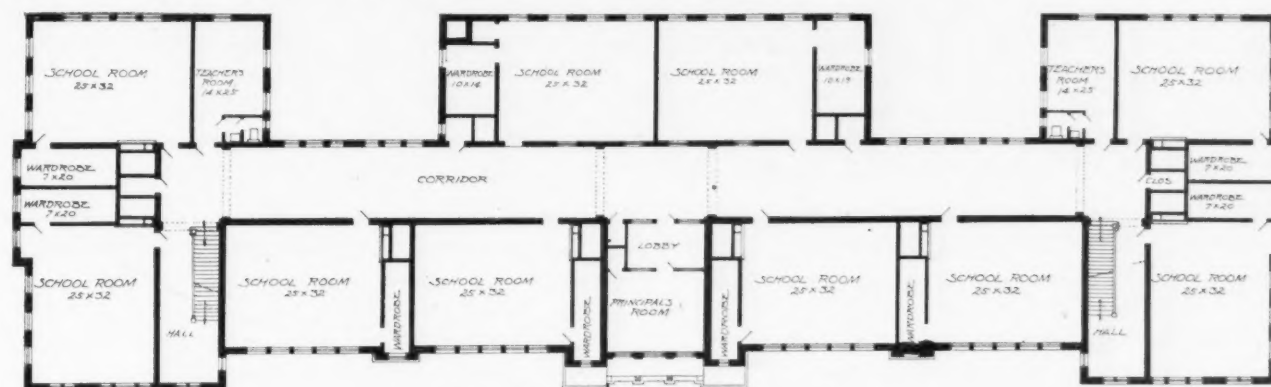
First Floor Plan—Modern City School

ferent kinds of composition and methods of construction resorted to for this purpose. It is, however, a bigger task than one might think to make an absolutely noiseproof wall. It is said that what is indorsed by Prof. S. I. Franz as the one noiseproof room is a room about 8 feet square and high, on the top floor of the University of Utrecht. Its walls are about 11 inches

came detached. "Oh, save my hair!" she cried to a gallant rescuer. "Madam," he gasped, "I may be a life-saver, but I am not a hair restorer!"

### Why He Objected

He—Oh, please, Miss Jeanne, do not call me Mr. Durand.



Second Floor Plan—Modern City School

thick. From the inside these are made up of successive layers of horse-hair felt, porous stone, dead air, wood partition, ground cork composition, and a plastered surface. The ceiling, though somewhat simpler made, has similar layers. The boards of the floor were sawed and the joints filled with lead to stop vibration, a layer of lead was then covered over all to the thickness of more than an inch, and over this in turn is used a carpet nearly half an inch in thickness, and sometimes a second carpet. A small window opens into a small connected room with a roof window, the two windows supplying both sunlight and ventilation. The door is double, the outer part accurately fitted

She (coily)—Oh, but our acquaintance is so short. Why should I not call you that?

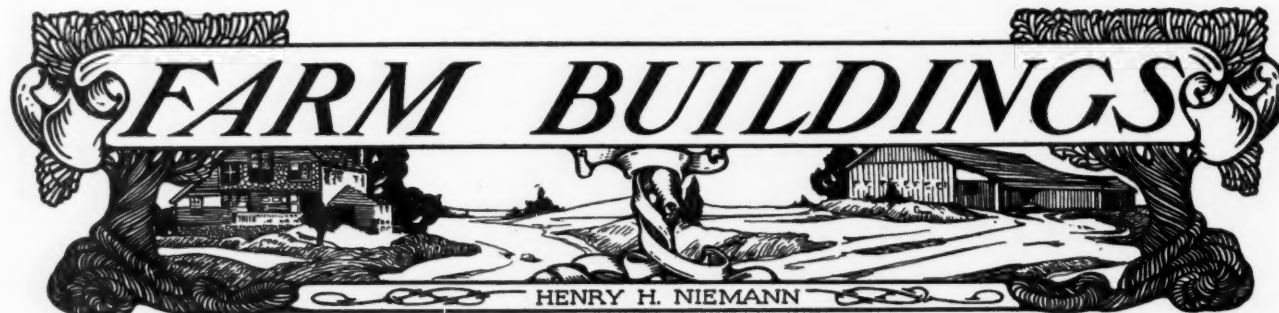
He—Well, chiefly because my name is Dupont.

### The Tannery

"What building is that?" asked a stranger of Willie Billfuzz, pointing to the school house.

"That?" said the boy, "why that's the tannery." And he feelingly rubbed his back (?) as he passed on.

The time to advertise is when you need the business. It's the hungry man who looks for the restaurant sign.



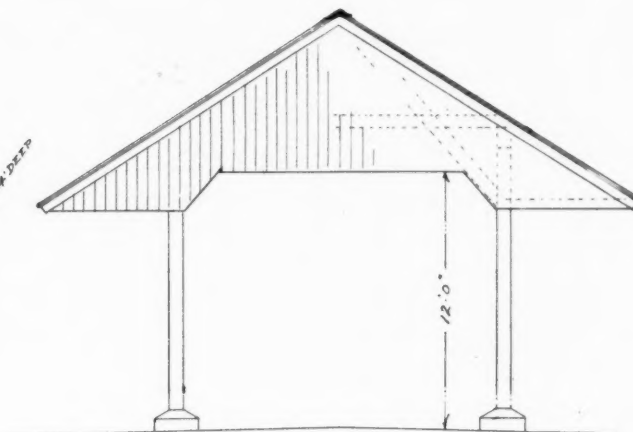
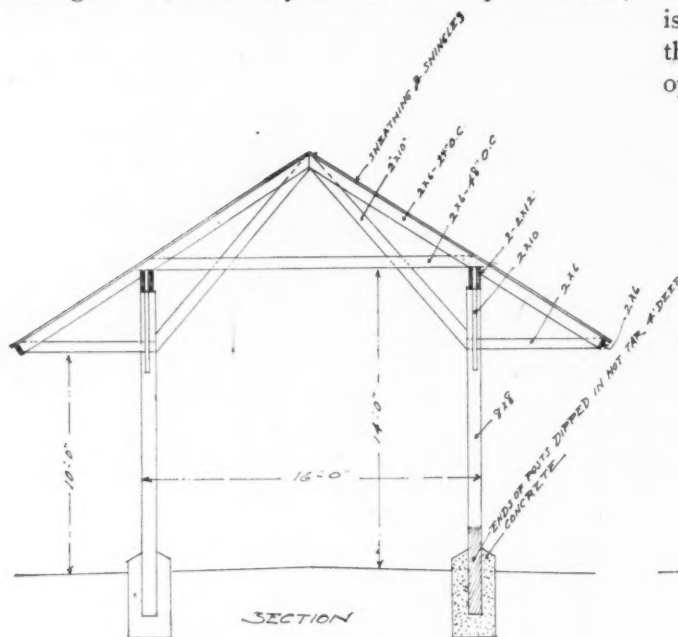
## Serviceable Shelter Shed

FULL WORKING DRAWINGS FOR A SUBSTANTIAL, CONVENIENT SHED FOR VEHICLES AND FARM IMPLEMENTS—DETAILS OF CONSTRUCTION SHOWN

WITH the increased use of machinery on the farm the question of proper shelter conveniences has become an important one. In the old days, when just a few pieces, the plow, drag, "stiff legs," etc., made up the entire equipment, the implements were easily stored in a small shed, the wagon was run in "onto the barn floor" and all was snug and tight. This is hardly the case at the present time,

these bays; but fewer could be used just as well, if a shed of less capacity were desired. The concrete footings of the posts extend above ground to a sufficient width and height to form a hub guard for the posts. The floor is packed earth with a gravel top coat.

This shed may be entered easily with double team at any point, sides or ends. The entrance at one end is large enough to admit a full load of hay. While this shed was built in one instance to serve as an open vehicle and implement shed, it would do just



however, as any farmer who has struggled with the problem of storing his hay-loader and side-delivery rake in an ordinary carriage shed will testify. placing implements under inconvenient shelter, have fallen into the shiftless habit of storing good machinery and wagons in the barn yard—where they may be seasoned by sun and rain! The careful, practical farm manager, however, insists that every vehicle and tool shall be protected when not in actual use; nothing shall be left out over night. Accordingly, convenient shelter sheds are provided.

The design we are showing this month serves this purpose admirably. The construction is strong and simple. Eight by eight posts are set in a double row 16 feet apart, both ways, thus forming a series of bays 16 feet square. The drawing shows five of

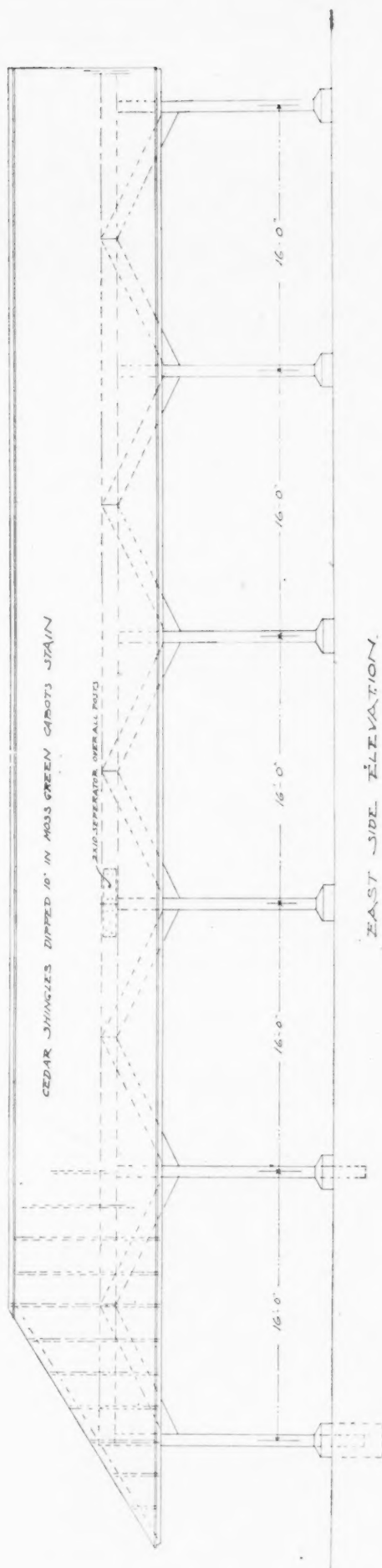
Some farmers, made very tired by the bother of

as well, better perhaps, as a stock shelter shed for the barn yard.



### Peculiar Construction

A building without windows has just been completed at St. Louis for a publishing company which is one of the most singular architectural freaks on this continent. It is constructed with solid walls having only two openings, one for a door in the front and one for another door in the rear of the building. While the structure was in course of erection it was the cause of considerable comment as to the method by which it would be lighted. The solid concrete walls extending into the air without a break attracted the attention of the curious and many surmises were made as to the uses to which the building was to be put.



The structure measures 68 by 170 feet in plan, is 58 feet high and is entirely lighted from a skylight in the roof, the main part of the building forming one large room. The building is of reinforced concrete, finished exteriorly with a two-inch marble facing. A copper cornice, 6 feet high, backed with a parapet wall of concrete one foot thick, runs around the top of the building and forms a striking contrast to the white marble surface.

The roof is carried upon steel trusses, of 65-foot span, which rest on concrete piers built into the walls. Curtain walls are built between the piers, being single and double, with an air space between two 6 inch walls in the upper portion. The air space is divided at horizontal intervals of 3 feet by solid vertical cross partitions of concrete. A reinforced concrete lintel, 8 feet above the level of the first floor, carries the double wall between the piers and allows of a recess due to the greater thickness of the upper wall.

The basement is lighted partly by area windows. The contractors who erected the structure anticipate a demand for similar work.

#### +

#### Signs

The enterprising manager of a little lyric theater in northern Pennsylvania believes in profiting by the misfortunes of others. One day he displayed the following sign in his house:

DO NOT SMOKE  
REMEMBER THE IROQUOIS FIRE

So great was the efficacy of this that before the end of the week he put up another:

DO NOT SPIT  
REMEMBER THE JOHNSTOWN FLOOD

#### +

#### Every Day Will Be Sunday

The following newspaper story, now going the rounds, purports to come from Chicago Heights, Ill.:

"The love affairs of the Day and Sunday families, who live near Chicago Heights, keeps gossips busy. There are five sons in the Sunday family and five daughters in the Day family. Three of the Sunday boys have already married Day girls. The two remaining boys are courting the two remaining Day girls, and the probability is that every Day will be Sunday by and by."

#### ♣

#### Knew Them

"Oh, yes," said the pilot on the river steamboat, "I have been on this river so long I know where every stump is." Just then with a jar the boat struck a stump. "There that's one of them now," he continued.





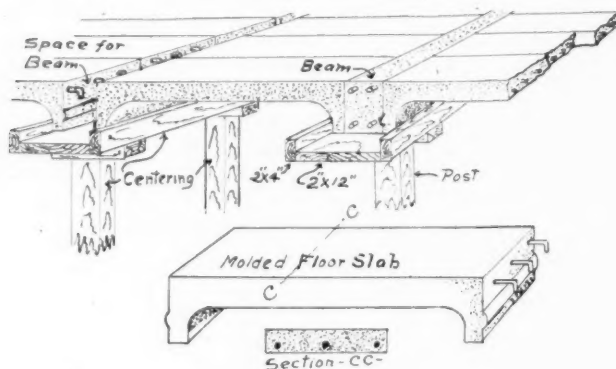
## Reinforced Concrete Floors

NEW SYSTEM MAKING USE OF MOLDED FLOOR SLABS WITH MONOLITHIC BEAMS AND SUPPORTS—HAS PROVED PRACTICAL AND A MONEY SAVER

By Fred W. Hagloch

THE heavy expense of forms (centering) has done much to retard the use of reinforced concrete. Many methods have been devised to reduce this cost; among which the use of steel forms, and the two systems of molding beams and placing after having become seasoned have gained some prominence. The fact, however, that greatest strength with least material is possible with monolithic work has made concrete engineers slow to depart from the all form method, such as is universally used in the leading systems of reinforced concrete.

The method illustrated may be used with the beams, girders and columns of any system of the monolithic type; the floor is made of slabs molded in forms much the same as concrete blocks, thus saving over half the cost in centering. The centering or forms required for columns and bottom of beams as shown,



and the floor slabs previously made, placed in position, form the bottom and sides of the beams; the reinforcing and concrete is then placed same as with any ordinary method.

In a small piece of work I found this system to have many advantages, the principal ones of which I shall mention: Saving of time perhaps 25 per cent; saving about 40 per cent of lumber and full half the carpenter work, while adding about 20 per cent to common labor in molding and placing the floor slabs. Fully 60 per cent of labor is saved in removing the forms, which is an item only appreciated by the experienced concrete builder. This method also enables

the builder to know that his forms are sufficiently strong before placing the soft concrete for the beams.

In rush work the floor above can be commenced as soon as the floor is completed, thus saving the several days' delay caused by waiting until the floors are partially hardened where the all monolithic systems are used.

The size and thickness of floor slabs, beams and girders are computed in the same manner as for any reinforced work—depending upon the length of span and load to be supported.

This method is especially desirable where working space is at a premium and speed on the building is an object.

Where flat ceilings are desired the floor slabs can be made double with webs connecting the upper and lower slabs much the same as a hollow concrete block laid on its side, in which the tensile strain would be in the lower slab or member and the compression strain in the upper.



### Skyscraper Plans Cost \$250,000

The new sixty-two story home of the Equitable Life Assurance Society, to be erected in New York, the plans for which are in the hands of Superintendent Murphy, of the Bureau of Buildings, will tower so far above the adjacent buildings as to completely dwarf them. The drawing of the plans was a stupendous task. Draughtsmen say it must have taken 150 men six months at least to overcome the difficulties in the way of such a structure. The estimated cost of this task by itself is \$250,000. The great folios of drawings number 70 in all, each one measuring 4 by 5 feet. A feature is the elaborate system of wind braces which will affect every floor from the sixty-second story to the ground.



### Arouses Suspicion

"When a man keeps complainin' dat he ain' had no opportunity in life," said Uncle Eben, "you kind o' wonder whether he am too busy kickin' to notice an opportunity ef it did come along."

## Hot Water System of Heating

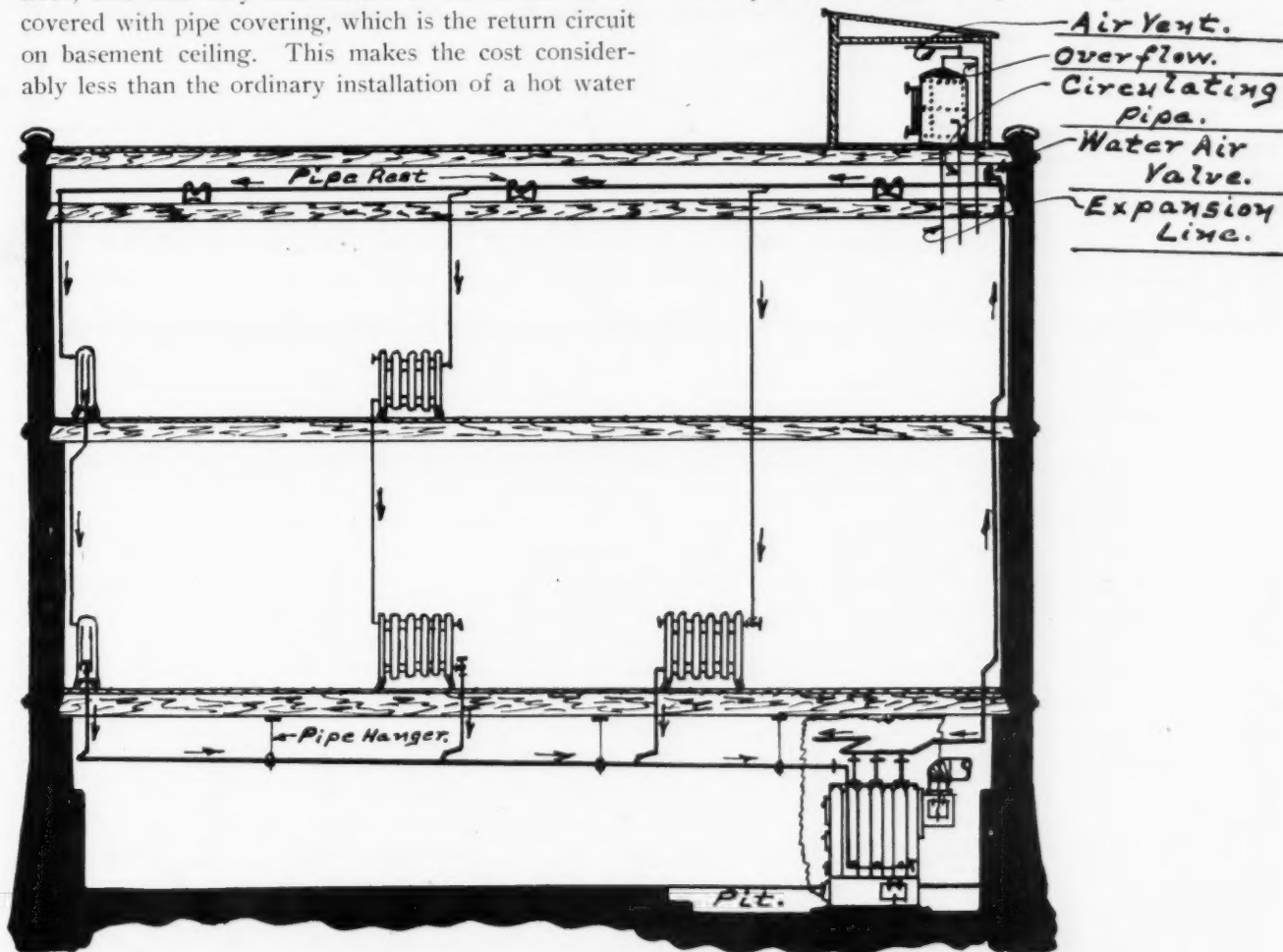
COMPLETE PIPE PLANS, SPECIFICATIONS AND CONTRACT FOR INSTALLING A MODERN OVERHEAD SYSTEM OF HOT WATER HEATING IN A SMALL HOTEL AND OFFICE BUILDING

By Perry Weber Rathbun

THE accompanying plans and specifications illustrate and describe a practical overhead installation for a hot water heating system, which is considered very good practice by architects, contractors and heating engineers of our country. Its special advantages are that it requires less radiation on second floor, and that only one circuit of mains has to be covered with pipe covering, which is the return circuit on basement ceiling. This makes the cost considerably less than the ordinary installation of a hot water

installation of hot water heating. The corner of this building, as will be noticed, on the first floor is a bank and a store room running from the front along the side. The hotel and the rooms belonging to it occupy the remainder of the lower floor and all the second floor.

This job was installed complete and guaranteed for



### -Elevation-Showing in a general way the Overhead System of installing a Hot Water Heating Plant.-

heating system, and gives a rapid circulation to the entire apparatus.

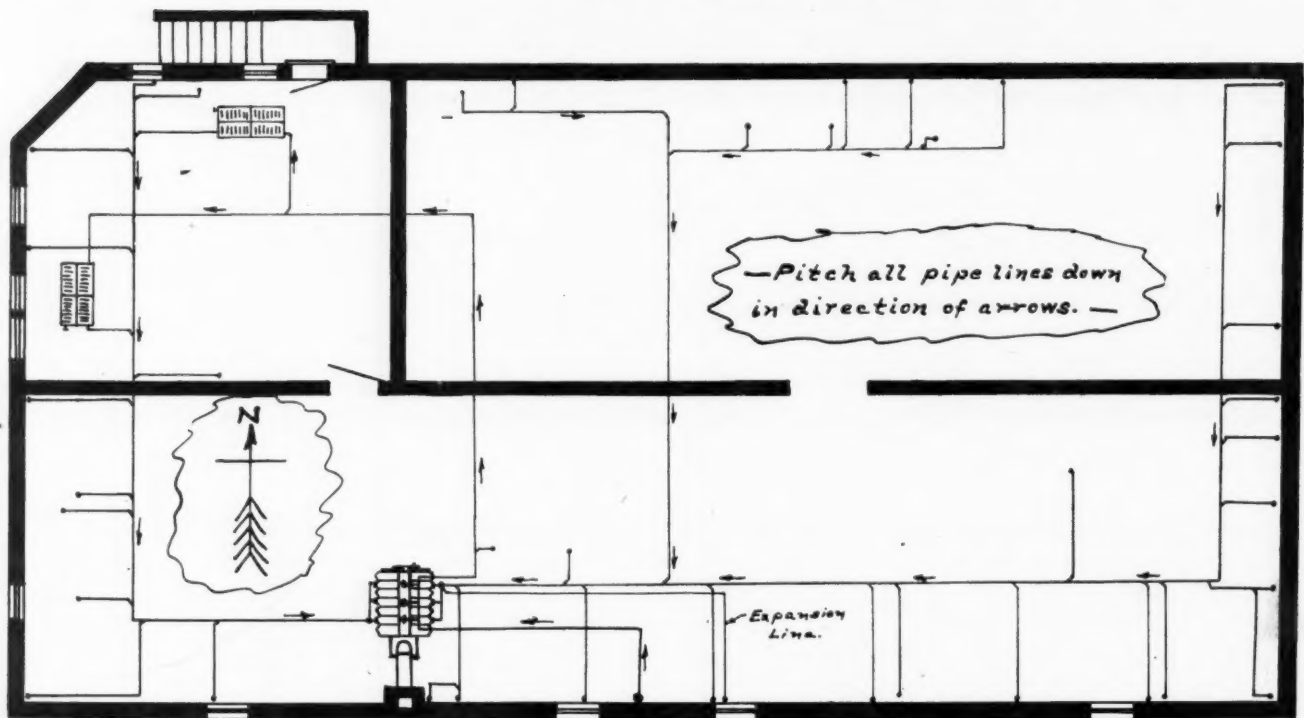
The system shown was installed under the supervision of the writer in a small town in western Nebraska. Steam heating, probably, would have been better adapted to the building shown and could have been installed for less money, but the owner, being a man who thought that any one stopping at his hotel should have the best, would consider nothing but the

approximately 59 2-3 cents per square foot of radiation. The specifications shown below bring into the form of a contract every item that is required on any kind of a hot water heating installation, and are very good ones for any prospective builder, or contractor and builder, to make use of.

#### Specification and Contract

For the labor and material required to construct a first-class hot water heating apparatus.

(Address) .....



Basement Pipe Plan.

**General Conditions**

These specifications and the accompanying plans contemplate the furnishing and erecting of a first-class hot water heating apparatus, as described and shown. All material must be the best of its respective kind, and the work of installation executed in the best manner possible by skilled mechanics, under competent superintendence. Contractor will be compelled to give the work his personal attention. The drawings and these specifications are intended to co-operate so that the work shown on one and not described in the other,

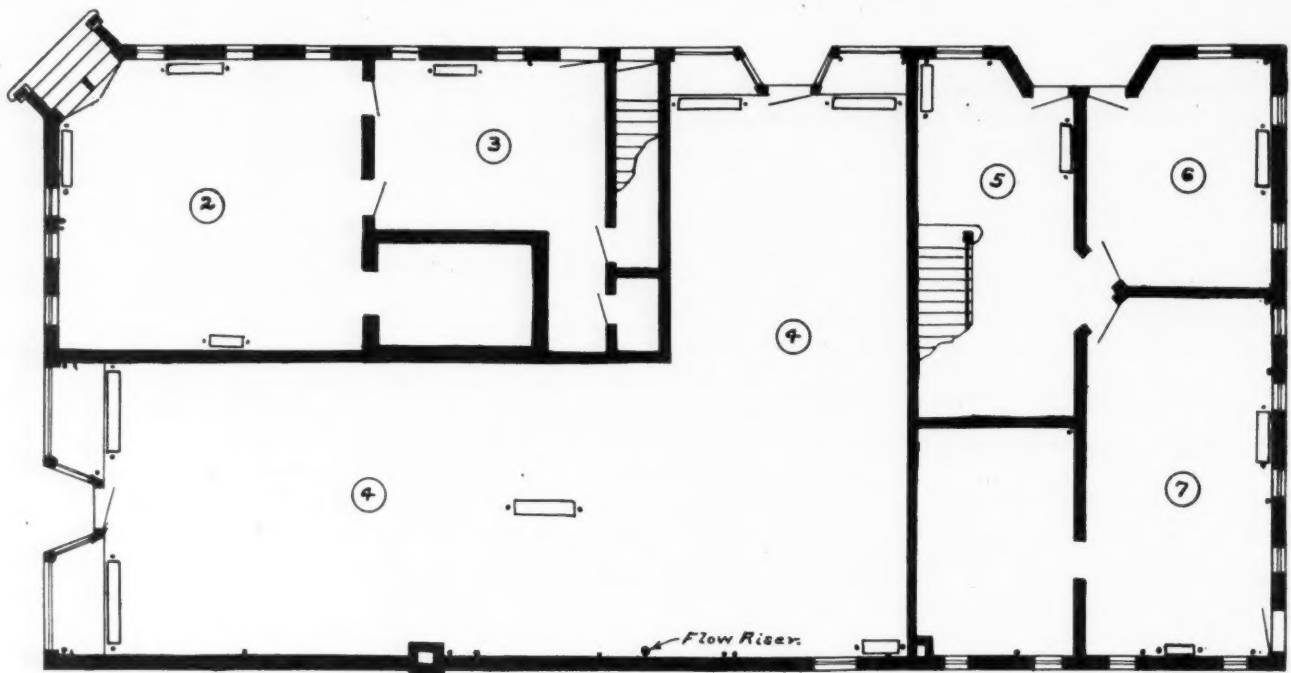
or vice versa, is to be executed the same as set forth in both. Contractor should commence his work as soon as the building is ready, and finish it at an agreed time, or as soon as practical thereafter.

**Owner and Architect**

Owner and architect, as a committee of two, will settle any differences which may arise in the installation of this system.

**Heater**

Furnish and place as shown on plans, as near smoke flue as possible, in the basement of the above given address, one improved cast



First Floor Plan.



iron sectional boiler, having fire pot 41 by 45 inches and a heating capacity equivalent to 4,300 square feet of radiation. Same to be complete with full set of fire and cleaning tools.

**Flue** Flue should be 16 by 16 inches, and for the use of the aforementioned boiler only.

**Damper Regulator** Furnish and place on syphon damper regulator at boiler between flow and return rising.

**Smoke Pipe** Smoke pipe from boiler to flue should be made of No. 22 black steel, heavily riveted and provided with close fitting damper and cleanout.

**Foundation** Heating contractor should furnish a suitable brick or concrete foundation for heater with an ash pit six inches below the level of the floor.

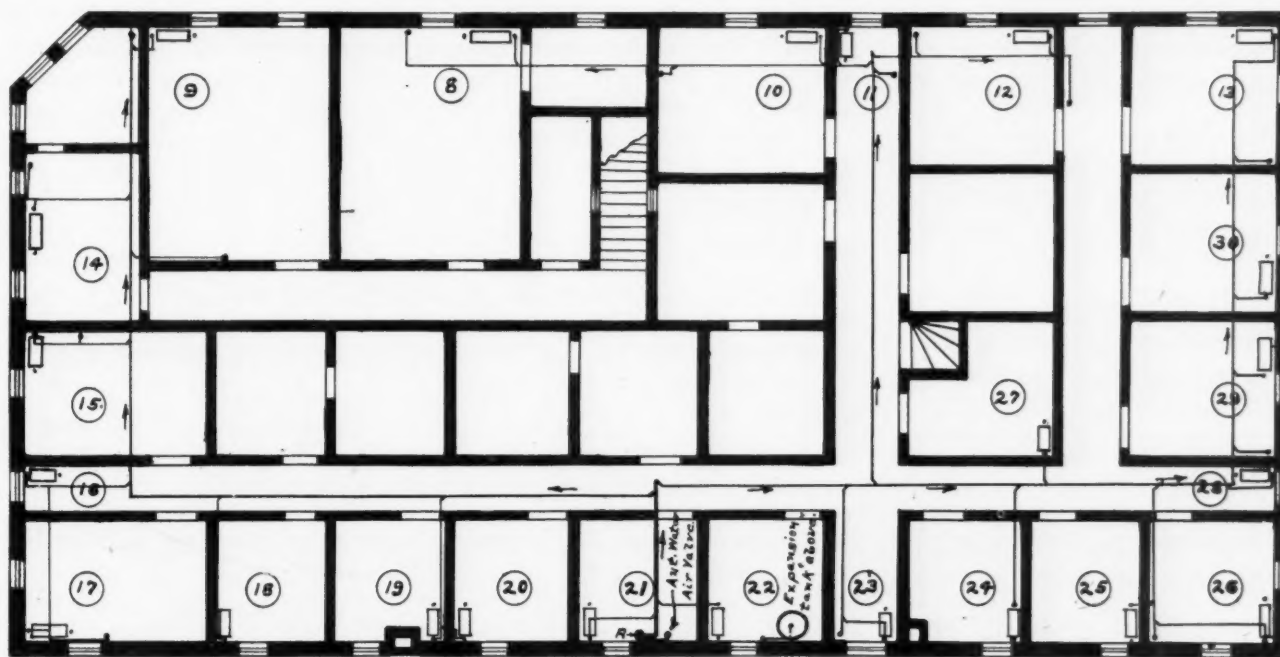
**Heater Fittings** Heater to be supplied with one altitude gauge and one hot water thermometer placed in a prominent position for making observations.

**Water Supply** Connection from the largest water main entering the basement to be made to heater, with a  $\frac{3}{4}$  inch stop cock in same, so

*Basement.*—Room 1, barber shop, 2 ceiling radiators, 1 inch, 72 feet, 80 degrees.

*First Floor.*—Room 2, bank, 3-38 inch 4 col. W. radiators, 1 and  $1\frac{1}{4}$  inch, 248 feet, 70 degrees; room 3, directors' room, 1-38 inch 3 col. W. radiator,  $1\frac{1}{4}$  inch, 80 feet, 75 degrees; room 4, store—4-20 inch 6 col. W. radiators,  $1\frac{1}{4}$  inch, 380 feet, 70 degrees, 1-38 inch 4 col. W. radiator, 1 inch, 45 feet, 70 degrees; room 5, hotel office, 2-38 inch 3 col. W. radiators,  $1\frac{1}{4}$  inch, 180 feet, 75 degrees; room 6, parlor, 1-38 inch 3 col. W. radiator,  $1\frac{1}{4}$  inch, 80 feet, 70 degrees; room 7, dining room, 2-38 inch 3 col. W. radiators, 1 and  $1\frac{1}{4}$  inch, 150 feet, 75 degrees.

*Second Floor.*—Room 8, office, 1-38 inch 2 col. W. radiator, 1 inch, 60 feet, 70 degrees; room 9, 1-38 inch 2 col. W. radiator, 1 inch, 56 feet, 70 degrees; room 14, 1-38 inch, 2 col. W. radiator, 1 inch, 52 feet, 70 degrees; room 10, chamber, 1-38 inch 2 col. W. radiator, 1 inch, 40 feet, 70 degrees; room 12, chamber, 1-38 inch, 2 col. W. radiator, 1 inch, 36 feet, 70 degrees; room 13, chamber, 1-38 inch 2 col. W. radiator, 1 inch, 48 feet, 70 degrees; room 15, chamber, 1-38 inch 2 col. W. radiator, 1 inch, 48 feet, 70 degrees; room 17, chamber, 1-38 inch 2 col. W. radiator, 1 inch, 60 feet,



Second Floor Plan.

that the system can be filled or refilled when desired.

**Blow-Off** A  $1\frac{1}{4}$  inch blow-off drain cock should be connected between the lowest part of the system and a branch of the sewer, so that the entire system can be drained when desired.

**Schedule of Radiation** All radiation to be sizes and heights set forth below, and placed in the various rooms as shown on the accompanying plans.

70 degrees; rooms 18 to 22, 5-38 inch 2 col. W. radiators, 1 inch, 180 feet, 70 degrees; rooms 24 to 25, 2-38 inch 2 col. W. radiators, 1 inch, 72 feet, 70 degrees; room 27, 1-38 2 col. W. radiator, 1 inch, 20 feet, 70 degrees; rooms 29 and 30, 2-38 inch 2 col. W. radiators, 1 inch, 88 feet, 70 degrees; halls 11 and 23, 2-38 inch 3 col. W. radiators, 1 inch, 80 feet, 70 degrees; halls 16 and 28, 2-38 inch 3 col. W. radiators, 1 inch, 100 feet, 70 degrees.

Total, 2,275 feet.

**Air Valves** Each radiator is to be supplied with a nickel plated improved air valve, with a proper key to regulate same.

**Radiator Valves** All radiators are to be supplied with nickel plated quick opening radiator valves with ground joint unions. These valves to be the sizes set forth in the schedule of tappings.

**Union Ells** All radiators to be supplied with improved N. P. union ells, with ground joint unions, all to be the sizes named in schedule.

**Automatic Water Air Valves** Where mains pitch in each direction on ceiling of second floor run a 1 inch air line from the top of main riser coming from basement up into attic. Run this 1 inch line in the attic and place an automatic water air valve at a location as near as possible to the above named riser, so that all air will be vented at this point, and the valve to be so constructed that no water can be forced through it.

**Expansion Tank** Place a 42 gallon galvanized expansion tank between second floor ceiling and the roof, this tank to be so connected with circulating coil that it will be impossible for same to freeze in the winter time. Expansion line running to this tank must be taken off of the largest return at the boiler, and an overflow taken from said tank back to basement and connected into sewer.

**Gate Valves** Both circuit mains in attic and basement to be equipped with heavy iron body gate valves, so that in case of a break-down or a heavy leakage of water, one portion of the system can be shut down, and the other kept in operation.

**System of Piping** System of piping to be what is known as an over head system of hot water heating, with flow main carried direct to second floor ceiling, and then branching off, distributing to the different radiators and risers, all returns from these radiators and risers to be collected on basement ceiling and returned to boiler. All branches must be taken from mains, with either a 45 or 90 degree elbow, so as to have a swinging joint. Risers should be installed perfectly perpendicular and in a neat manner. All mains to be graded to a true alignment, pitching down in the direction of arrows, 1 inch to every 10 feet. All piping to be installed without traps or sags. Pipe used in this work to be new and in first-class condition; 2½ inch or larger to be steel, lap welded; 2 inch or smaller to be genuine wrought iron, butt welded.

**Fittings** All fittings used in this work to be heavy pattern of gray cast iron, beaded and of the best make; all threads in them to be sharp and clean cut.

**Flange Unions** Place on flow and return mains at boiler and on each one of the two circuits on the second floor ceiling a heavy cast iron flange union, with best quality bolts.

**Floor and Ceiling Plates** All risers or radiator connections passing through floors, ceiling or walls, are to be provided with nickel plated improved plate.

**Floor Sleeves** All pipes passing through floors or ceiling should have galvanized iron or metal sleeve to protect the wood and plaster so as to conform with the underwriters' requirements.

**Hangers** All mains should be supported in a neat manner, with cast iron expansion pipe hangers, securely fastened to floors and ceiling joists, at a distance apart of 12 feet.

**Finally** The accompanying plans and the above specification are intended to provide a complete and perfect apparatus in every respect. Contractor must see that everything is figured, as no extras will be allowed for any portions of work required, even though not shown or described. The entire system must be filled with water and fired for at least ten hours before the owner is called upon to accept the work. Any defective fittings or split pipe must be replaced.

**Guarantee** The heating contractor must guarantee this system to have a quick and perfect circulation and be capable of heating the building to the degree named in schedule when proper fuel is used under proper management.

**Note** All bidders are requested to examine the building thoroughly before submitting their bids.

Accepted.....1908.

Owner .....

Architect .....

Heating Contractor.....

Contract Price .....

**Terms.**—50 per cent of the contract price to be paid to contractor upon the delivery of boiler, radiation, pipe and fittings on the ground; 25 per cent when work is half installed; and the remaining 25 per cent when work is completed and thoroughly tested.

### ✦ A Timber Test

The soundness of lumber may be ascertained by placing the ear close to one end of the log while another person delivers a succession of smart blows with a hammer or mallet upon the opposite end, when a continuance of the vibration will indicate to an experienced ear even the degree of soundness. If only a dull thud meets the ear, the listener may be certain that unsoundness exists.

### ✦ As Advertised

"What's your time?" asked the old farmer of the brisk salesman.

"Twenty minutes after five. What can I do for you?"

"I want them pants," said the old farmer, leading the way to the window and pointing to a ticket marked "Given away at 5:20."—*Judge*.



Ira S. Griffith

## Utilizing Spare Time of Dull Seasons

HOW A NUMBER OF CARPENTERS HAVE SUCCESSFULLY SOLVED THE PROBLEM—HANDICRAFT FURNITURE MAKING AS A DELIGHTFUL AND PROFITABLE SPARE TIME OCCUPATION

**W**HAT to do with one's time during the dull seasons is an old question; yet, since it has never been satisfactorily solved it is ever a new one. In the large cities the difficulty has been overcome somewhat by the methods there employed. In the cities there has been a very decided breaking away from the idea, so long prevalent, that building operations can be carried on only during the fairest weather.

To a great extent this new idea has been literally forced upon the public. The large builders have been the prime movers. They have had the advantage of the smaller builder in that they have been able to plan their operations as they pleased. No owner stands over them with searching eyes ready to go into hysteria upon the slightest unfavorable effect of the elements. They are able to start their foundations in the

fall before the early frosts and can arrange to protect their material by storing it in great sheds placed conveniently to the scene of the building.

No one denies but that it is better to build a house or a barn during the summer months; the lumber will be in better condition, the workmen can do better and more careful work when the body is comfortable. It is an open question, however, whether the public would not be the gainer in the long run if it were not quite so exacting about favorable weather conditions.

It is no great pleasure to work out of doors at carpentry when the thermometer is registering zero or below and the wind seems determined to cut through the thickest of clothing with an occasional effort to place a snow drift under the collar and along the "small" of one's back. Most workmen however would



Examples of what One Home Workshop Is Producing



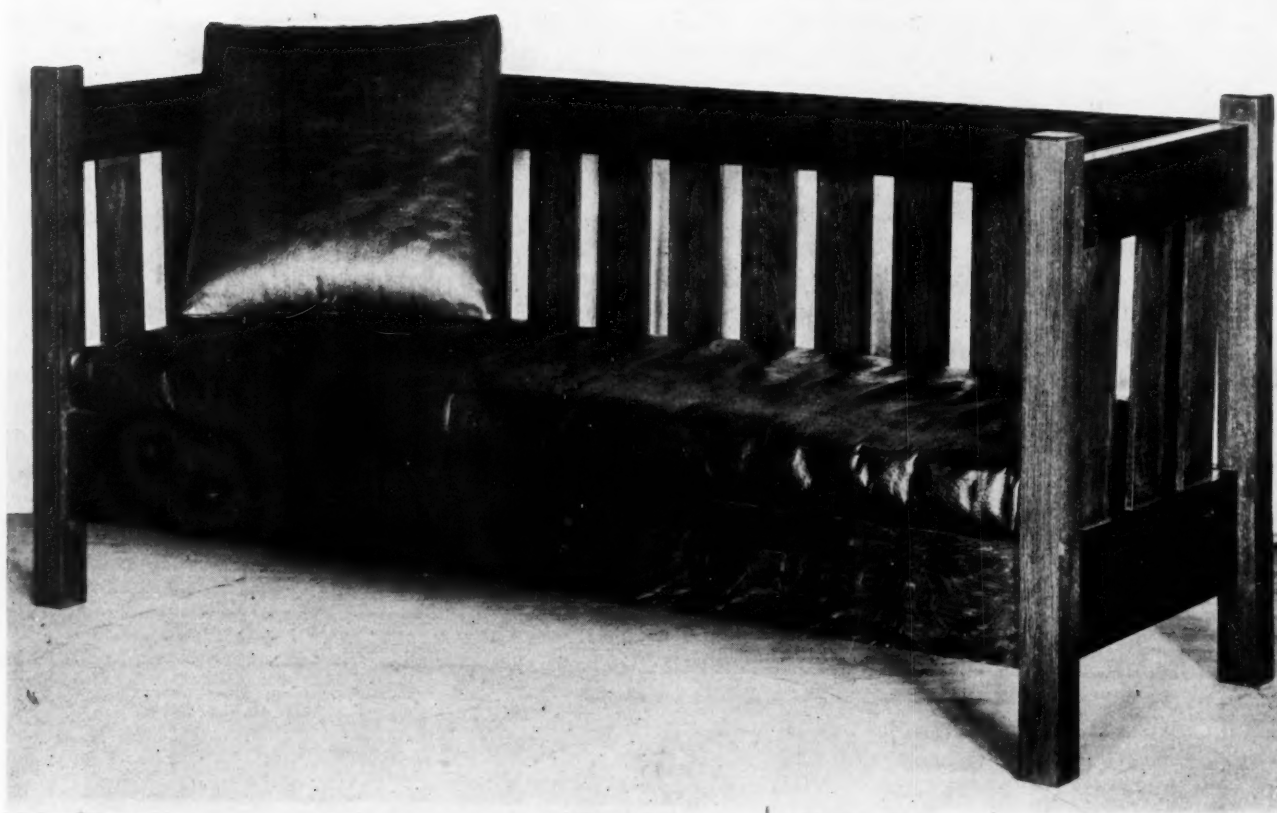
prefer even this to enforced idleness at a time when coal bills are accumulating with such unwonted rapidity.

The writer well remembers time spent upon a tall building shingling a roof in zero weather with a stiff wind blowing from the north making it necessary to sit upon the unlaied shingles in an effort to hold them until they could be fastened. No gloves, for the hand that picked and set the nails must be free; cramped

ment for the "good men" they want to hold is desirable.

The unprecedented demand for carpenter, or hand made furniture has given them their key, the working out of which is proving a source of pleasure as well as of profit. This demand for craftsman furniture is no passing fancy, it has surely come to stay; so it seems that their solution is worth consideration.

It might as well be confessed in the very beginning



Valuable Piece of Hand-Made Furniture—Built at Home at Odd Times

limbs that would have been cold enough even with violent exercise sending the warm blood through them.

Though the city carpenter has partially solved the problem of his enforced idleness, even with suffering on his part and somewhat of sacrifice in the quality of his work, the great mass of carpenters—the men in the small cities and towns—are prohibited from working at their trade through the winter months by public sentiment, however willing they may be to make the necessary sacrifice.

These are the men who may be interested in the experiment of a firm of carpenters and builders of Oak Park, Ill. This firm has quite an extensive building and jobbing patronage and does considerable winter work; but it finds "off days" when other employ-

that no carpenter is likely to become wealthy in undertaking to work along lines such as these. The fact that furniture makers with their highly improved facilities are ever on the lookout for new demands precludes any such expectations. There are many people, however, and their number is increasing, who recognize a difference between careful, painstaking, thorough hand made furniture and the hastily constructed machine made product and are willing to pay an advance in price for the hand work. The argument we wish to make is that the worker ought to be able to make it well worth while to so spend his spare time.

Hand work does not necessarily mean that no machinery may be used with propriety. There is much drudgery that can be done better by machine than by

hand, such for instance as the leveling of table tops. The firm above mentioned has its shop equipped with machine saws, mortisers, jointers, etc., and is thus better fitted to compete with the factory product. It does mean however, that there is to be no "hurry up," "slap-it-together-any-old-way" method.

The fact that a shop is not equipped with machines does not make such construction helpless before the machine product. As has been said, there is a demand that can be met by the strictly hand-made only, and that at advanced prices. The writer has in mind two brothers in a small village of less than a thousand people whose reputation for thorough and artistic work has penetrated that bewildering supplied market of Chicago; not because of cheapness but because of real worth. They use no machinery at all.

It must not be supposed from what has been said that mere muscle or even exceptional skill and a surplus of time is all that is demanded to make a success

mand the filigree variety with "ornaments" stuck on—ornaments that are likely to peel before the goods can be delivered. It is a mistake to try to meet this demand. Such furniture is not only not adapted to hand construction but defeats the very aim the craftsman should have, "the" plea upon which his work demands superior recognition—honesty with beauty.

A young man, an excellent workman of the thoroughgoing kind, attempted to execute a demand for two library tables of the curly-me-cue variety with the result that his ornaments peeled, the veneer cracked and the highly polished varnish surface made it well nigh impossible to repair them. He would better have abided his time until he could have educated the taste of his customers to an appreciation of the kind of work he was so capable of performing.

The beauty of craftsman finishes lies in the ease of their application and repair.

There are many other things with which the car-



**"Honest Construction" Pieces by a Carpenter Firm Who Are Also Handcrafters**

of this kind of work. Markets are glutted with the commonplace, the tawdry. Whatever is made must have an inherent quality to recommend it as well as thorough construction. In other words, the design must be in keeping with the spirit of the craftsmanship. It is not possible within the confines of this paper to dwell upon that which distinguishes craftsman design from other design. The illustrations show quite clearly what would be said.

It may be that the people of one's town with money to spend do not appreciate craftsman design but de-

penter might occupy his spare time. Whatever line is chosen, it is the better part of wisdom to avoid the ordinary and the commonplace. As a boy, the writer remembers an ambitious carpenter who put in a lathe. He turned out base-ball bats, rolling pins, etc. The experiment proved unprofitable, however, because the things produced were so commonplace the trade failed to see any advantage in the hand turned product. Since there were large factories putting on the market literally millions of machine turned pieces at a cost slightly in excess of the actual cost of the material,

there was but one way the experiment could result.

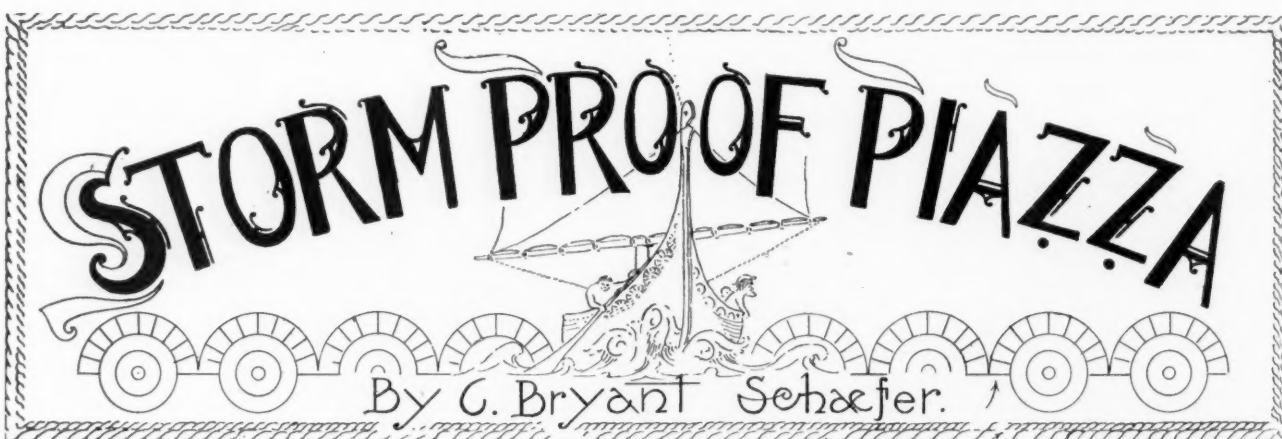
Again, whatever is undertaken, a systematic effort must be made to present the products to the public in the most favorable light. One firm has a special show room on a prominent street. This room is used as an office as well. Along its walls are cases for the keeping of finishing hardware samples. From these the prospective home maker selects his hardware. This, by the way, is an excellent idea as it gives the customer an opportunity to see what he wants, and the builder an exact method of figuring. This is much more satisfactory to both than the old way of allowing a lump sum, the customer to make his choice after the contract is let. The floor space is appropriately covered with their hand made furniture, while the show windows are given a few of the more "taking" pieces. These windows attract their share of the public's attention. In addition to these efforts at publicity a fetching "ad" with suitable half-tones is carried in the local paper. They now are planning to issue a neat folder.

In this as in many another line much depends upon



Built at Home by an Enthusiast

the public. There need be no risk, for it is possible for the carpenter to begin in as modest a manner as he may like. Such a thing as creating a demand which does not exist is not unknown.



**T**HE storm-proof piazza is the latest thing to test the ingenuity of wood workers. They are made to be entirely inclosed in cold weather and are becoming very popular. People call them the out-door room of the house. They are made about the size of a room and have projecting roofs and good foundations. The shelter is such that furniture is quite safe.

The accompanying design is for a piazza extending from the side of a house and from which it has entrance. The inside dimensions are about 11 feet 6 inches by 12 feet 6 inches and about 9 feet 6 inches high. These measurements can be changed according to circumstances.

A gate and narrow steps should be provided opening to the garden where most convenient.

The foundations should carry a water table continued from the main building. The flooring should have good pitch to run the water off.

In building the super-structure the scantling should be first put in place. Cut 2 by 9 foot studs to proper length for the corner posts. They should be

8 feet-8 inches in this case. Set the plates upon them. Notch the ends of the rafters. The ridge should be wide enough to extend above the sheathing into the ridge roll. Put up this roof frame and spike on the ceiling joist. The roof can then be sheathed.

When the rough carpentry is finished the mullions can be fitted, marking their location accurately on the floor. Then take 1 3/4 inch by 5 1/2 inch dressed and rabbeted jambs and cut the right length. Do the same with the casing pieces, which may be 7/8 inch stuff, and make the mullion boxes, setting the casing a trifle back of the edge as shown on the drawing. Set them in place all around the porch, including the corners.

The next thing is to fit the sills and transom bars. They should be of shapes shown on the sections, with more or less pitch, and dressed from 2 inch stuff. They have to be cut out on the back to fit the mullions and a miter allowed for the flower shelves outside.

When this work is done the ceiling can be finished in beaded stuff from the transom head over the top.

The projecting rafter ends can be left open under-



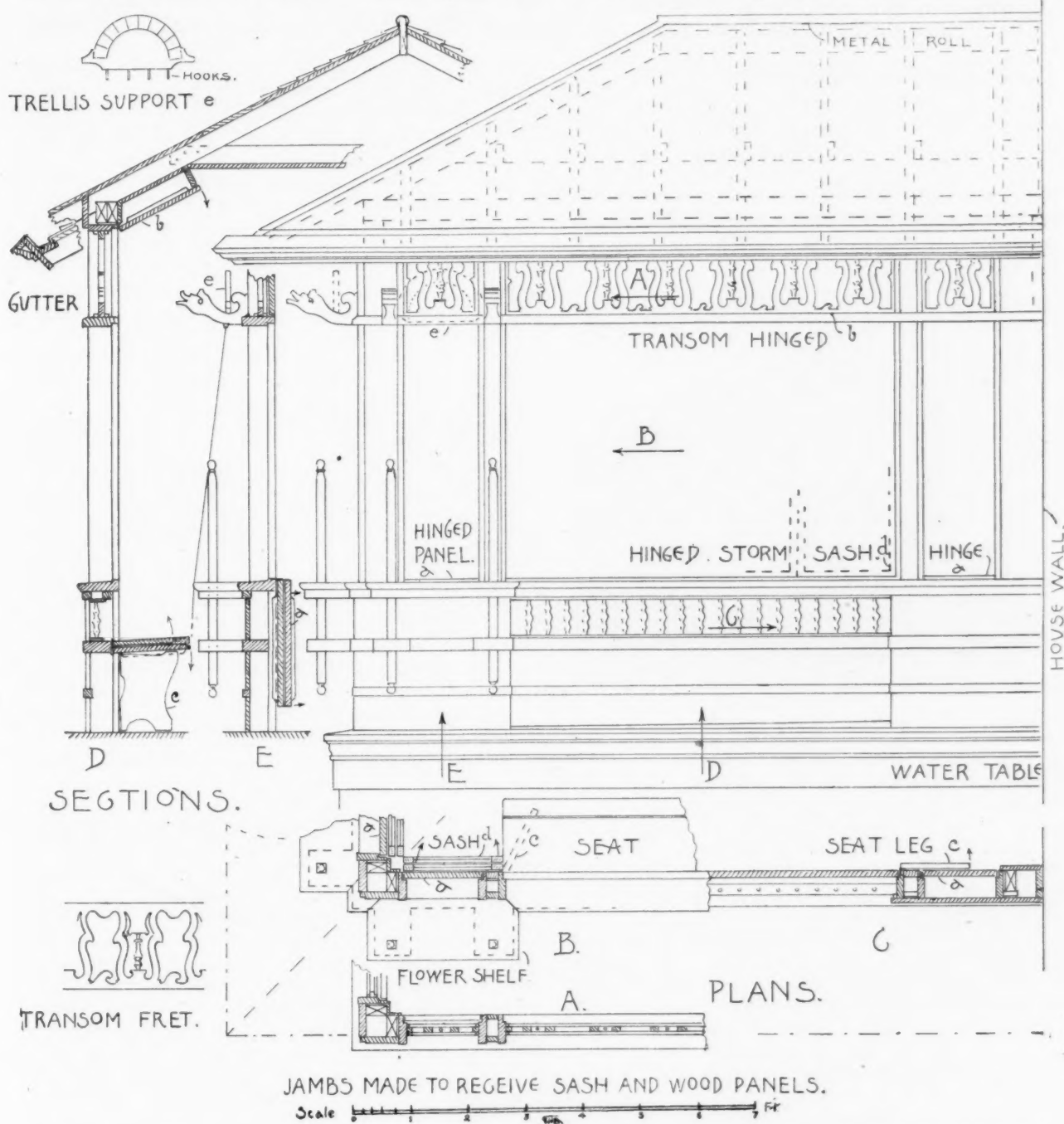
neath if planed. The gutter bottom wants to be wedged up to secure pitch. The cornice can be finished with any style of crown molding.

The wainscoting around the corners is made solid by fitting boards between the rails. The piazza is then substantially finished.

The large openings of the three sides are for storm sash. They should be divided into small lights above

The narrow opening between the posts is closed with a plain panel hinging at the bottom and middle. This folds down behind the wainscoting.

The panel behind the spindles hinges down and the panel beneath hinges up to form a seat as shown on the diagram. A leg at both ends turns out to support it. This utilizes the panels when the porch is open. The change can be quickly and easily made.



the eye and hinged, opening from the middle and doubling back into the corner section. They should also unhinge when desired. Screen frames may also be made for insertion.

The transom is closed by a plain panel, with cleat on the back. This swings down from the top. The small corner openings can have a loose cover buttoned in place like the rest.

The trellis support is made to slip aside and drop down. In this way wires and vines can be held away from the building in repainting.

There is just enough decorative work in this design to be pleasing in connection with the plain lines of the construction. Without some ornamentation the appearance would be too severe. With a well chosen subject for decoration the work becomes more valuable.



### Remodeling Design Requested

To the Editor:

Winchester, O.

I am sending you herewith a photograph of my residence and am desirous of the opinion of the architecturally inclined brothers of the profession. I would be pleased if some one would give me a sketch with their opinion of how to fix the window marked with an X. I wish to drop it about two feet and can move it to the front of the building about the same distance. It is located at the



present about two feet above the bay window, overlapping the same about 6 inches. I would like to make a bay of it. Can I do it and make a mechanical looking job of it under the conditions existing? The main object in the alteration is to get it lower, as it is too high from the platform of stairway. I do not think I would care to use more than one window, would like to use the same one, but would not object to something else were it more suitable. I would want the whole addition to appear in perfect harmony with the present building, not extravagant in cost yet better be a little extravagant than too plain. The window is of 26 by 30-inch glass. Any comments or suggestions offered will be gratefully received by one of the charter members of the AMERICAN CARPENTER AND BUILDER. A. C. STIVERS.



### To Prevent Formation of Ice on Eaves

To the Editor:

Watertown, N. Y.

Can your staff or some of the brothers give the rest of us the benefit of their own experience in regard to the problem of how to prevent the formation of ice on the eaves and gutters of roofs? In this northern climate where we have from four to five months of solid winter I am often called upon to find a way around this serious question. J. M. KANE.

Answer: Your question is an interesting one, for it touches a matter of great importance all over the colder parts of this continent. Before suggesting a remedy it may be well to examine into the causes of this very prevalent trouble, which annoys many a householder winter after winter.

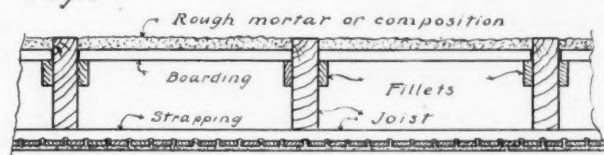
When a body of snow several inches thick lies on a roof it forms a very effective non-conductor of heat. The warmth of the attic penetrates or radiates through the boarding and shingles (wood or metal alike) and cannot pass off into the air on account of the layer of snow acting as a sort of blanket to retain the heat. In consequence, the under part of the layer of snow is melted slightly and trickles down until it reaches the eaves. As the eaves overhang the walls, the internal heat of the house does not affect this part of the roof, which is in consequence quite cold. The water trickling down the surface of the roof freezes at once on reaching this cold zone of roof and gradually accumulates a mass of ice ranging from two or three inches to a foot or more in thickness. This serves to back up the water over the warm part of the roof and hence the leaks which are the worst effects of this condition of things.

It should also be observed that when the snow melts from the outside, that is, from the heat of the sun, no trouble occurs at the eaves; the resulting water running freely down and off the roof. Seeing then, that the cause of the trouble is the radiation, through the roof itself, of the internal heat of the house, the remedy evidently lies in preventing such radiation.

This may be done in two ways, either of which is fairly effective alone; but for first-class work and to insure the very best results, it would be well to use both methods in combination.

The first method consists in thoroughly "deadening" the ceilings of all the upper rooms of the building; that is, to form a dead air space through which the heat of the rooms cannot escape. It cannot be too widely known by builders throughout the colder regions of this continent that a lath

Fig. 1

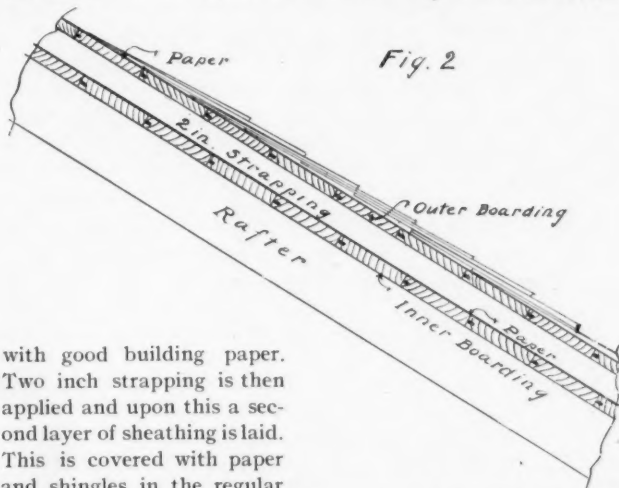


and plaster ceiling allows a tremendous lot of heat to escape into the attic of a building, and, if for no other reason than the saving of fuel, this should be prevented. The method adopted by the writer in his practice is to lay rough boarding on fillets near the upper edge of the ceiling joists and to cover the same with some composition to render it air proof. Fig. 1 shows the details of this method which calls for slightly deeper joists to carry the extra weight of the deadening.

There are, of course, several "pugging" compositions sold for deadening purposes, but the writer has found an entirely effective one in a mixture of coarse mill sawdust and plaster of Paris. The sawdust and plaster are mixed together and made into a mortar with water in the ordinary way, and a coating laid on the boarding about one inch in depth. Care must be taken that the spaces between the ends of the joists over the wall plates are properly filled; either by lath and plaster or a piece of board, cut tightly in between and nailed in position. This is important, for the effectiveness of any

dead air space as a non-conductor of heat (or cold) depends upon its being absolutely tight everywhere.

But many buildings, such as churches, halls and schools, have no attics, but are open to the roof timbers, and obviously the foregoing would not apply in such cases. For the prevention of heat radiation in roofs of this class, a double roof is the only effective remedy. A detail of this is shown in Fig. 2 from which it will be seen that the sheathing is laid on the rafters in the usual way and then covered



with good building paper. Two inch strapping is then applied and upon this a second layer of sheathing is laid. This is covered with paper and shingles in the regular manner; thus forming a dead air space as desired. Such an arrangement will also prevent the condensation of moisture upon the inside of the roof, and the consequent annoyance from water dropping on the peoples' heads, which is so often experienced in churches and halls when well-warmed inside during zero temperatures out of doors.

As remarked earlier in this reply, to be absolutely sure of preventing the formation of ice near the eaves complained of by our correspondent, it would be well to adopt both the deadening of the ceilings and the doubling of the roof. It will be found, however, that the thorough deadening of the ceilings will generally be sufficient, and very few architects specify both methods except in the most expensive structures.

T. B. KIDNER.

### Roof Nails and What!

To the Editor: Garfield-on-the-Arkansas.

In reply to Claude Zickell of Sanford, Me., in the June issue send you a working model of how to bore a square hole with a round bit. Would send drawing, but the only drawing tools I could ever get the confidence of is the drawing knife, which was used in constructing model. Am no longer in the lumber business, but the AMERICAN CARPENTER AND BUILDER contains so many good things that I have "got the habit," and can't taper off, "not yet."

Am going to ask your faculty a question that I believe will be of interest to many of your readers, as I doubt if I am the only man in captivity who does not know the why.

In building coal and lumber sheds, inch yellow pine was used on yellow pine dimension, on roof 10 and 12 penny wire nails were used. Part of the 10 penny nails were put in brine. Very few of these have come out; but those not so treated and many of the 12 penny are out 1/4 to nearly 2 inches, some have not started at all. This keeps me guessing. Small part of roof, covered with felt roofing, does not show a nail started. To those who have driven and drawn nails in yellow pine it is a known fact that a 10 penny nail is often as much as a hammer handle will stand to draw. It would no doubt require more than 100 pounds to start it. Now just what starts it, and makes it "move on" in this case is what I want to know. No doubt this is easy to you, and all you will have to do it to talk it into the wax cylinder,

and the intelligent compositor will give it to a waiting world. All the reader will have to do is, believe it—if he can.

Now Mr. Editor, with a candidate nominated who is going to be elected president, and this question satisfactorily settled, there is no reason why this country, even outside of Kansas, will not enter into an era of prosperity, the like of which, neither the sun nor the Standard Oil Co., has ever seen.

N. O. WAYMIRE.

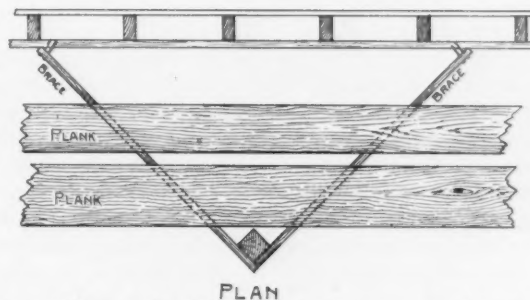
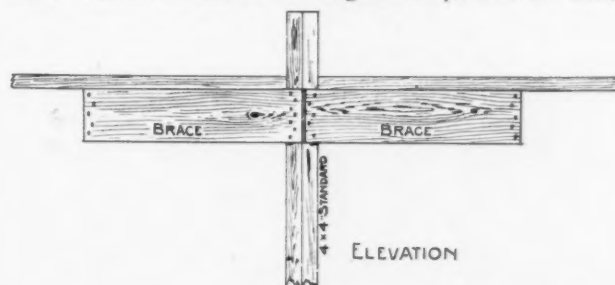
### Scaffolding

To the Editor:

Dallas, Ore.

I enclose sketch of a form of scaffolding that is new to me and perhaps unfamiliar to others of your readers. At any rate, it appears to be superior to the sort of temporary scaffolding usually erected about a building, where the horizontal support is nailed at one end to an upright scantling and at the other to a block nailed against the outside of the wall.

It will be seen by the sketch that two horizontal pieces, instead of one are used, thus providing against lateral movement, without the aid of the diagonal strips that are nailed



to the uprights and which are always more or less in the way when the workmen find it necessary to pass in and out beneath the scaffolding.

J. R. MILLS.

### An Indorsement

To the Editor:

Galt, Ontario.

May I express my appreciation of your publication. I am not long out from the Old Country; and, without in any sense wishing to belittle its technical publications on the building trade, I must congratulate you upon the superior standard maintained by your estimable paper. I am much interested in the articles on Steel Square by A. W. Woods now appearing. Before seeing these I had read works published on the same subject and I think his method of explanation much better, as he gets at the root of the thing and is not content to say such and such figures are to be taken on the square because he knows them to be correct. He makes the student see why they are correct, which I take to be the most important thing in instruction. His explanation of tangents is the most important thing in roof cuts.

I had the greatest difficulty in the Old Country in making fellow workmen see that the edge of a hip or valley had no relation to the plane of the roof unless it was "backed" or "V'ed" and they consequently failed to see that the cuts must be obtained from tangent and hip lines. W. FRANKS.



### Roof Plans

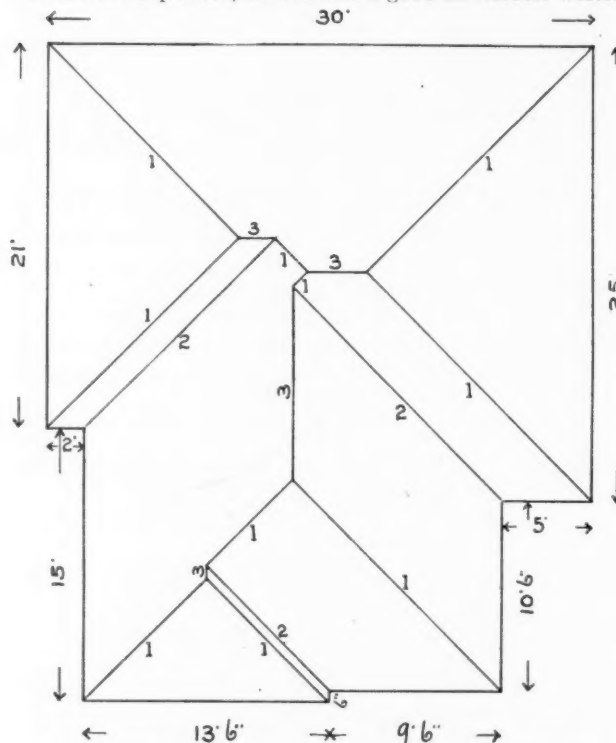
To the Editor:

Ft. Collins, Col.

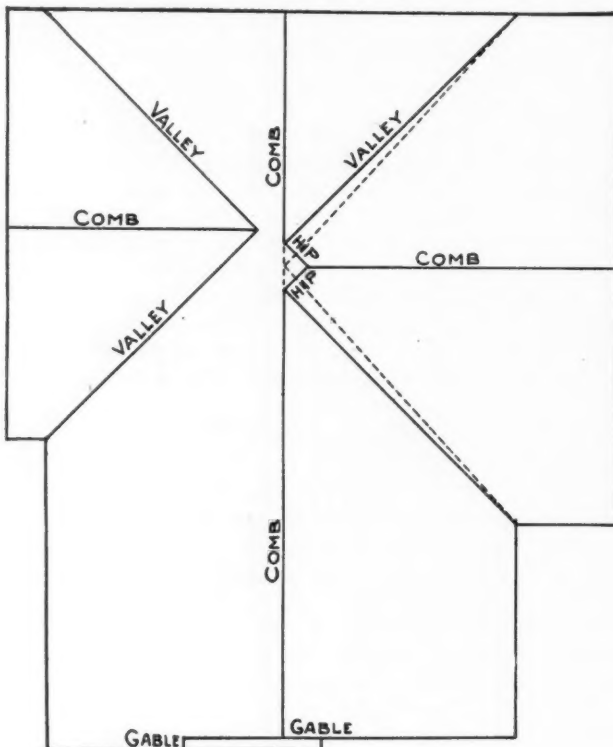
In answer to F. R. Wright's roof plan request, I beg to submit the enclosed drawings.

The price of the building will govern which he may use.

In the full hip effect, he will find a good serviceable western



type of country home. In the gable treatment a more expensive, better appearing job. The heavy lines show all roofs the same pitch and with an extra gable at back for effect. By following the dotted lines, he can do away with the two short hips at the top but will have to flatten the pitch of one side gable. A nice treatment also is to flatten one side gable and raise the other side, and make all combs level. Unless he uses a flat cornice, however, he will have cornice



and molding trouble in good shape, unless he is an expert joiner.

On a very narrow lot, a good and pretty effect is to use a double gable in front, single in rear, and both side angles hipped in. This will not crowd the lot so badly.

He says an architect planned the house. (?) Do not the plans show the roof treatment? It should.

CHAS. M. GATES.

### To Lay Out a Stage Circle

To the Editor:

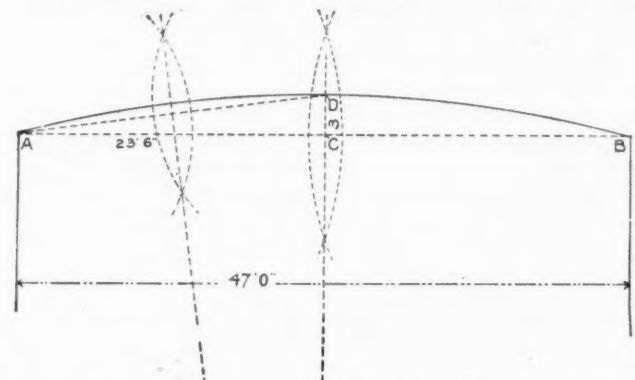
Salem, Mass.

I am a subscriber to your paper, and wish to avail myself of your kind offer of assistance. I have a stage to build that is 47 feet wide with a 3 foot projection, as shown by the enclosed sketch. How can the circle be laid out?

J. C. CHEATHAM.

Answer: This is found in the same manner as for a segment head for a door or window, only on a larger scale. The accompanying diagram shows how it can be done, as follows:

Lay off a line the width of the stage, as from A-B, and



at the center of this line, as at C, lay off another line at right angles to A-B. From C measure off the projection of the curve (which in this case is 3 feet), as at C-D. Connect A-D and bisect the line, as shown, and at the intersection with the extended line D-C will be the center from which to strike the circle.

A. W. WOODS.

### Brick by Wall Measure

To the Editor:

Ord, Neb.

Please give me the rule for measuring brick according to wall measure. Are corners measured twice, and how are large openings measured; also how about pilasters?

C. E. GOODHAND.

Answer: Custom varies somewhat in different sections of the country, but in the west it is the accepted custom to count  $7\frac{1}{2}$  brick to the superficial foot for each half brick in thickness of the wall, or  $22\frac{1}{2}$  to the cubic foot of wall. The corners should only be measured once, and all openings should be deducted, except for flue openings, the ends of joist, etc., on account of the waste of material in clipping around or filling in such parts. Pilasters should be counted as so much wall. In masons' measurement it is not the custom to allow for openings containing less than 100 square feet. The outer measurements are taken for the walls and internal corners counted once in addition to the above. Piers that are faced with pressed brick are counted on all of such sides faced, as so many feet of wall. There is some question about the validity of this in the case of very large piers, as for instance, a pier 4 by 4 feet measured on all sides would be equal to a wall 4 feet wide by 16 feet long. It is better in any case to have these points agreed upon in writing, stating what is to be counted, so as to avoid misunderstandings and oftentimes serious litigation.

A. W. WOODS.

### To Camber a Truss

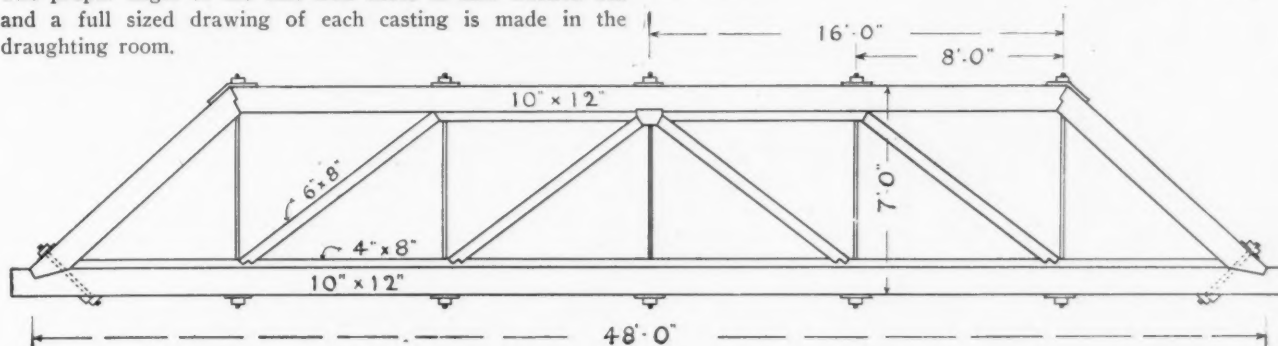
To the Editor:

Rockford, Wash.

Find enclosed tracing of a truss I have to frame. Specification says frame it so it will have 2-inch camber when tightened up. Tell me how to get the proper location of the holes for the rods, also the lengths of each stick of timber. Without camber is easy for me; but when it says camber I am lost. Make the explanation as simple as possible, for I am no good in geometry; perhaps if I was I would not need to ask this question.

CONSTANT READER.

Answer: The method of cambering such a truss as the tracing shows involves some knowledge of mathematics and drawing. Nearly all engineers are now in the habit of making the necessary calculations and figuring the exact lengths of the braces upon the drawings before they are sent out. The proper angle of the cast iron shoes is also worked out and a full sized drawing of each casting is made in the draughting room.



In theory, when such a truss is cambered, the upper chord becomes longer than the bottom. The panels will thus be out of square and the braces slightly longer in consequence. A rule for finding the increase of length has been worked out and is shown in Fig. 2, together with the application to the case in point. The figure eight in the formula is a "constant," and is used in all cases.

The increase found by working this very simple calculation is divided amongst the panels. If your drawings have not been figured for camber, you will require to make a full-sized drawing of one panel of the truss upon a board platform or convenient floor. The drawing should show the panel

Fig. 2

To find increase in length of upper chord,

put down:-

$$\frac{\text{Depth of truss} \times \text{Camber} \times 8}{\text{Span}}$$

(All in feet or inches)

$$\frac{7 \text{ ft} \times \frac{1}{8} \text{ ft} \times 8}{48} = \frac{7}{36} \text{ ft or } 2 \frac{1}{3} \text{ ins.}$$

as much wider at the top as your calculations will direct, and the braces can then be cut to length and bevel on your drawing. Of course, the upper chord is not actually lengthened 21-3 inches; all that is necessary being to cut your braces to fit the full-sized drawing of the distorted panel. In this case the distortion (out of square) is very small, as the truss is shallow, and may be taken as one-half inch for each panel, and the braces may be made five-eighths or three-quarters of an inch longer than they would be if panel were square.

Another simple plan for a small truss like this would be to frame it up (assemble it) without any braces, but with the strutting or straining pieces spiked on upper and lower chords. Then lay your braces across and mark the net lengths and allow five-eighths or three-quarters of an inch more. Ease up your bolts and insert the braces; then screw up on bolts and your truss will be cambered as desired.

This reply is, of course, for a particular case and for a

simple wooden truss. It must be noted that in steel trusses, where the braces abut against machined surfaces, very exact calculations are necessary for finding the lengths of braces, and angles of bearing surfaces. In large wooden trusses, great care is also taken in this respect, although it is easier to adjust the length and cuts of the braces in this material.

The positions of bolts are obtained by spacing evenly, as shown, and should present no difficulty. T. B. KIDNER.

### Repairing Veneered Doors

To the Editor:

Early, Iowa.

I wish to repair a couple of oak veneered front doors. The veneer is beginning to let go on the lower part of the doors and is warping up on the edges. Can there be anything done with them?

W. W. LOWE.

Answer: There are three ways to repair oak veneered doors, and the one of these three which is best for you depends somewhat on the condition of the door. These three ways are: (1) Clean out the door under the veneer, apply a little fresh glue, and with hand clamps and straight pieces of board glue the raised edges down again. (2) Take the veneer off the door, clean the frame off, get new veneer and re-veneer it all over. (3) Replace the door with a new one. If the veneer on the door is very badly damaged the chances are it will be cheaper and better in the end to replace it entirely with a new door. If this is not convenient it is practical to strip the frame of all veneer, get fresh veneer, and simply go over the entire door and veneer it again. If it is a door that it is not desired to repair in this way, and one valuable from associations or some peculiar ideas that make it important to retain the original veneer, you can, by carefully cleaning it under the veneer where it has peeled off, insert some good fresh glue and patch it up by using hot cauls and hand clamps. Get your boards or cauls, as they are called, good and warm, and it won't hurt to have the frame warmed, too, because it makes the glue spread much more smoothly and prevents lumps, and then lay a piece of paper over the face to prevent the caul sticking and clamp with hand clamps.

J. CROW TAYLOR.

### To Bore Square Hole with Round Bit

To the Editor:

Marion, Wis.

I will answer Mr. Claude Nickell's puzzle for boring a square hole with a round bit. He did not say what it was to be bored in, but I will say wood, which seems harder to most people. Take a jointer and make a nice shaving, say two-inch wide. Fold the shaving once; place between two pieces of blocks and put them in a vice edge up. Take any size bit; place bit in center of joint and bore in depth, half the diameter of bit. You then have a square hole bored into wood with a round bit.

J. B. HOFFMAN.

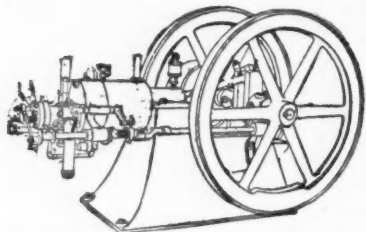
Note: Correct solutions for this puzzle have been received also from C. T. Everett, Calais, O.; F. A. Stover, Sheffield, Pa.; and Theo. Krehbiel, Mundridge, Kans.

# PRACTICAL TRADE APPLIANCES

## Which is the Most Perfect Power Engine

The correct answer to this problem depends upon the amount of horse power desired, but for the carpenter who needs from a three to a twelve horse power engine, one of the five sizes of the Sampson engine will be found perfect in every particular. The Sampson combines simplicity of construction, low cost of operation, freedom from

noise, great power and moderate cost, and stands without an equal in having more desirable features and less working parts than any other engine now in use. In the first place, the Sampson is very easy to start, under any condition of weather. Any average school boy can start it and operate it with ease, for the reason that there are no complicated parts, and no springs to weaken and cause trouble. The few parts of its mechanism are made from the best material the market affords—are tested thoroughly by skilled mechanics, and eliminate the necessity of constant adjustment.



The reason—or one of the reasons—for the Sampson's superiority is that the engine is not sold through jobbers or middlemen, but is handled by the Jones Bros. Mercantile Company, who own and control their own factory, and all patterns, and are thus able to maintain its perfection in every particular. They stand back of the engine with the most broad, liberal and rigid guarantee that can be made. The purchaser gets the engine at a price which represents only manufacturing cost plus their one small profit.

The mixing chamber of the Sampson is adapted to the use of gasoline, naphtha, denatured alcohol, distillates, producer gas, and natural or artificial gas, and can be changed from one to the other without adjustment of valves while the engine is in motion. The igniters in many machines sometimes get out of order; in the Sampson it is simple and reliable and reduces the wear on the batteries and igniter points to a low degree.

The governor is very sensitive, insuring smooth, steady running at any desired speed. It is of a new and special design which permits changing the speed of the engine at any time while running.

It is a usual thing for engine manufacturers to so design their engine as to hide much of its intricate mechanism, so as to make it look simple. In the Sampson, which has fewest



## Residences and Small Buildings

need comparatively as much ventilation as larger constructions. Very frequently the ventilation of a residence is left to the cracks and crevices—which at best is most unsatisfactory and inadequate.

Absence of all odors, dampness, drafts and providing the pure, healthful atmosphere in the home is the result of using Burt Ventilators.

## Burt Ventilators

are praised in actual use. Read the following extract from a letter from one of our Cincinnati representatives:

"Three 20-in. and One 24-in. Glass Top Burt Ventilators are to go on Mr. C. P. Taft's residence (brother of William H. Taft, Secretary of War). The architect stated positively that nothing but Burt Ventilators would be allowed to go on this work. So you see that speaks well for you."

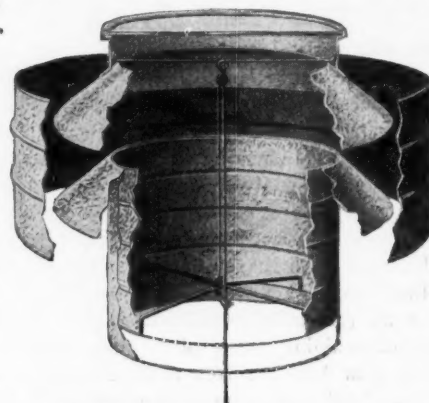
Further information in reference to the use of Burt Ventilators for residences will be gladly given.

Send for our new eighty-page catalogue, giving fine illustrations of Mills, Factories, Shops, Foundries and Residences where Burt Ventilators are in successful use.

**The Burt Mfg. Co., 500 Main St., Akron, O.**

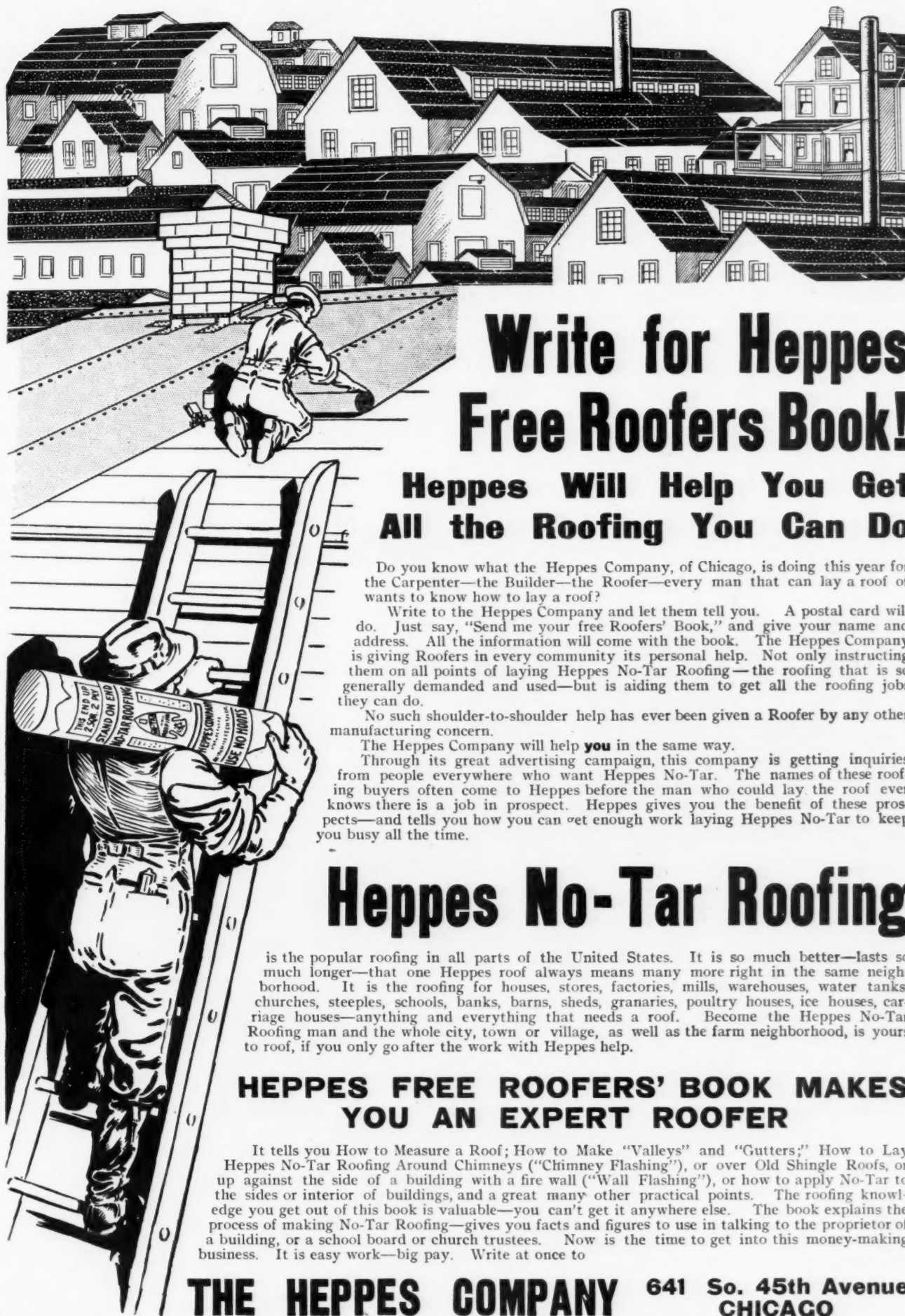
*Largest Manufacturers of Oil Filters and Exhaust Heads in the World.*

GEO. W. REED & Co., Montreal, Sole manufacturers of "Burt" ventilators for Canada



Notice Sliding Sleeve Damper. Patented.





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Free Roofers Book!**

**Heppes Will Help You Get  
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Do you know what the Heppes Company, of Chicago, is doing this year for the Carpenter—the Builder—the Roofer—every man that can lay a roof or wants to know how to lay a roof?

Write to the Heppes Company and let them tell you. A postal card will do. Just say, "Send me your free Roofers' Book," and give your name and address. All the information will come with the book. The Heppes Company is giving Roofers in every community its personal help. Not only instructing them on all points of laying Heppes No-Tar Roofing—the roofing that is so generally demanded and used—but is aiding them to get all the roofing jobs they can do.

No such shoulder-to-shoulder help has ever been given a Roofer by any other manufacturing concern.

The Heppes Company will help **you** in the same way.

Through its great advertising campaign, this company is getting inquiries from people everywhere who want Heppes No-Tar. The names of these roofing buyers often come to Heppes before the man who could lay the roof ever knows there is a job in prospect. Heppes gives you the benefit of these prospects—and tells you how you can get enough work laying Heppes No-Tar to keep you busy all the time.

**Heppes No-Tar Roofing**

is the popular roofing in all parts of the United States. It is so much better—lasts so much longer—that one Heppes roof always means many more right in the same neighborhood. It is the roofing for houses, stores, factories, mills, warehouses, water tanks, churches, steeples, schools, banks, barns, sheds, granaries, poultry houses, ice houses, carriage houses—anything and everything that needs a roof. Become the Heppes No-Tar Roofing man and the whole city, town or village, as well as the farm neighborhood, is yours to roof, if you only go after the work with Heppes help.

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YOU AN EXPERT ROOFER**

It tells you How to Measure a Roof; How to Make "Valleys" and "Gutters;" How to Lay Heppes No-Tar Roofing Around Chimneys ("Chimney Flashing"), or over Old Shingle Roofs, or up against the side of a building with a fire wall ("Wall Flashing"), or how to apply No-Tar to the sides or interior of buildings, and a great many other practical points. The roofing knowledge you get out of this book is valuable—you can't get it anywhere else. The book explains the process of making No-Tar Roofing—gives you facts and figures to use in talking to the proprietor of a building, or a school board or church trustees. Now is the time to get into this money-making business. It is easy work—big pay. Write at once to

**THE HEPPES COMPANY** 641 So. 45th Avenue  
CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

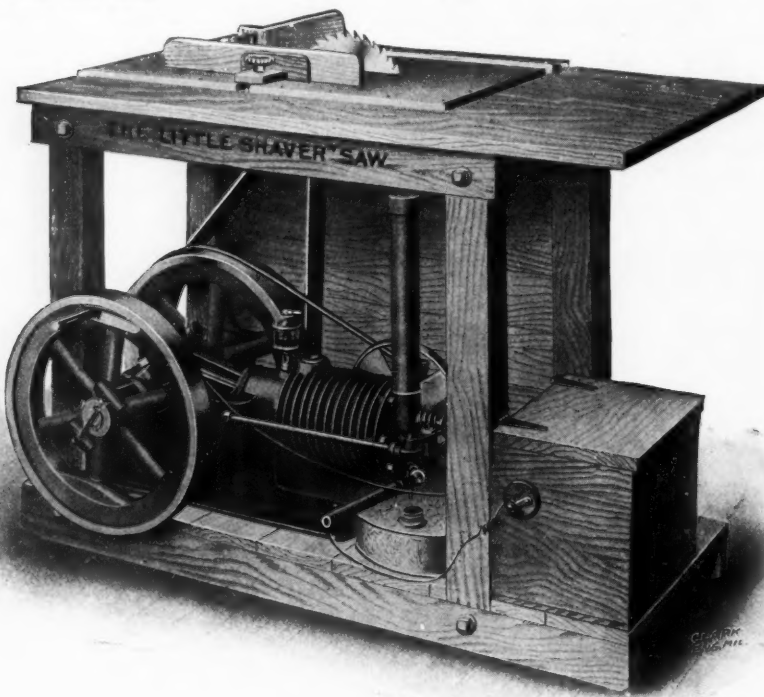
parts, all parts are where they should be—on the outside of the engine head, in plain sight, where they are very convenient to get at.

All parts of the Sampson are interchangeable. If at any time a repair is needed it can be readily procured with certainty of fit. Any one of the Sampson sizes will develop from 10 to 20 per cent more than its rated horse power. The prices range from \$119.75 to \$336.00, depending upon the horse power desired.

The best evidence of the merit of the Sampson engine is the guarantee under which it is sold. Instead of the one year guarantee under which most engines are sold, the Sampson is covered by a rigid five year guarantee, so thorough and binding as to be suicidal to any company whose engine did not make good in every particular. To those of our readers to whom the purchase of an engine is a problem, we suggest you write the Jones Bros. Mercantile Company, of Kansas City, Mo., for their "Sampson" catalogue.

### Do Your Own Millwork

The Inter-State Equipment & Engineering Co., Old Colony Building, Chicago, are having a big run on their Little Shaver Saw, and are running their advertisement of the Saw in this issue. They will be in shape to fill orders promptly after this issue.



This outfit has been a long felt want and a glance at the illustration will be sufficient to convince any carpenter contractor that it is an exceptionally handy outfit, one that will enable him to do a great deal of his mill work right on the job, do it quickly and at a small expense.

Two saws are furnished, a cross cut and rip saw, and fitted with gauges, enabling cross-cutting, rip sawing, mitering, etc. The engine furnished with this outfit is built on the most modern lines and can be operated by any one.

The Inter-State Equipment & Engineering Co. also handle the Little Shaver floor scraper and they will be pleased to mail circulars and their proposition to anyone interested in these time and money savers. They are making a special price on their Little Shaver floor scraper for the month of August.

### No Paint Roofing

Everybody recognizes now-a-days that the so-called Ready Roofing proposition has made good so far as giving thorough

protection is concerned. There has always been the objection, however, that these materials were expensive in the long run because they required coating with a heavy paint about every two years. This objection has now been met by the well-known Amatite Roofing.

Amatite is provided with a top surface of crushed mineral. This surface needs no painting, nor indeed any care whatever. It is perfectly capable of withstanding any kind of weather, and will give continuous satisfaction without attention or repairs for many years.

Doing away with the painting nuisance removes the last obstacle to the wide use of ready roofings, and a great boom in this kind of business can be confidently predicted.

A sample of Amatite Roofing will be sent any inquirer on request. Address the nearest office of the Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburg, Cincinnati, Kansas City, Minneapolis, New Orleans.

### Special

The following is of special interest to any one desiring the manufacture of special and patent articles made in metal. Special machinery, die and tool work can be done to the best advantage and at the lowest possible price at the National Stamping & Electric Works, 153-159 South Jefferson street, Chicago, Ill. This company has for many years made a specialty of manufacturing difficult machinery, dies and tools, having started a number of years ago in a very small space in this city, manufacturing for the trade and developing new ideas for patentees, also manufacturing difficult machinery to make new inventions a "success."

Owing to their prompt service and high grade work, which gives every customer complete satisfaction and his money's worth, they have developed into a large concern located at the above address, occupying some twenty thousand square feet of floor space. Less than a year ago, they were compelled to add the entire building at No. 160-162 South Clinton street for the sole purpose of manufacturing dies, tools and special machinery. This place is equipped with new and special machinery and is in charge of one of the very best mechanics in America, who has for twenty-five years devoted his entire energy to the purpose of perfecting and designing difficult automatic machinery. Today the National Stamping & Electric Works are in better position to furnish any difficult tool, die or machine than they have been at any time heretofore, having more complete equipment and having added a number of high grade mechanics to their already complete force. It will give pleasure to any one who sends an inquiry for anything that he may want to develop or manufacture to find the prompt and careful service received from the above firm.

In order to get reply in the shortest possible time, letters should be addressed care Die & Tool Department, National Stamping & Electric Works, Chicago, U. S. A.

### A Practical Cement Roofing

Fireproof and weatherproof, unchangeable with the ages, cement has lacked only toughness and elasticity to become the ideal roofing. Spread in a comparatively thin continuous sheet, cement cracks with the expansion or contraction of the roof framing, even when reinforced with wire netting—and every crack develops a leak.

But mixed intimately with asbestos fiber, which reinforces the concrete and holds it together against stress from every



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**Satisfaction Guaranteed.**

We guarantee absolute satisfaction. We mean every word of that. We want your business only on a square business-like basis. We will deal honestly and fairly with you. If you buy any material not fully up to our description, we will either refund your money or exchange for the correct material. This company has a capital of \$1,000,000 and a surplus of over One Million Dollars. We refer you to any Bank or Banker anywhere. Write to any commercial agency or ask us for names of people who have bought their lumber from us recently. We have a large stock of lumber and hundreds of letters received by us daily. Our best evidence of our quality is the vast number of satisfied customers.

**Write Today For Our Low Lumber Prices**

Ask us to send you our latest lumber price list. It will be sent you so clearly and plainly that you can tell at a glance just what our quotations are. Our grades are clearly defined. No attempt to hoodwink you. Quick answers to all your questions just what you buy. We want you to be able to say you "bought your lumber and building material from us and get value for your investment."

That's the way we built up this business. That's the way we intend to continue to build. We require your patronage and we will give it to you. We will and we will make you a reply so convincing and clear that you can't help but give us the business.

## Everything Used In Building Sold At A Big Reduction

## BARGAINS IN WINDOWS

**5000 Windows** from various wrecking operations at prices ranging from 25c up. In this lot are a number of windows that are very fancy that will be sold at half the price of new ones. **Fancy Front Windows** brand new, high grade 1 3/4 in. check rail, they are up-to-date in design, bottom sash glazed with double strength clear glass, top sash with fancy ornamentations, sizes 2 ft. 9 in. x 4 ft. 6 in. to \$4.90, 4 ft. x 5 ft. 10 in. \$6.35. **Cottage Front Windows** size 3 ft. 8 in. x 4 ft. 2 in., \$3.52, 4 ft. x 5 ft. 2 in., \$4.20, 4 ft. 6 in. x 6 ft. 2 in., \$6.69. Two light check rail **Windows** size 1 ft. 8 1/2 in. x 3 ft. 2 in., 63c. 1 ft. 11 1/2 in. x 4 ft. 6 in., 74c. 2 ft. 1 1/2 in. x 3 ft. 10 in., 81c. 2 ft. 21 1/2 in. x 4 ft. 10 in., 95c. Four light check rail **Windows** size 2 ft. 1 in. x 3 ft. 10 in., 70c. 2 ft. 5 in. x 4 ft. 6 in., 95c. Eight light check rail **Windows** size 2 ft. x 4 ft. 6 in., 77c. **Cellar Sash** two light, size 2 ft. 1 in. x 16 in. 38c. 2 ft. 9 in. x 20 in. 62c. **500 Storm Sash**, first class, two light brand new at 74c. **265 Fancy Windows** from the St. Louis Exposition, each 60c. **1000 second-hand Barn Sash**, each 52c. **5000 Used Sash** from the St. Louis Exposition glazed with 1-8 in. ribbed factory glass in all sizes which we will sell at per sq. ft. 6c. All kinds of Window Glass, Plate Glass, Ribbed Sky-light Glass and everything required in Window Glass and Sash.

**DON'T BUY YOUR BUILDING MATERIAL UNTIL YOU WRITE FOR OUR ESTIMATE**

## White Enameled Bath Tub

**\$35.00** odds & white Enameled Bath Tub. 600 "New Style" bath tubs, finest galvanized steel with the enamel baked on the inside, nicely finished on the outside, heavy w.c. rim, 5 ft. long. **Bath Room Outfits \$25.** With steel enameled tub, vitreous earthen closet bowl, polished, hardwood seat and tank, complete with nickel trimmings ready to install. Other complete outfits from **\$35.00 to \$150.00.**

**Plumbing Material of all kinds** at prices that do not represent cost of production. We buy at Sheriffs' and Receivers' Sales only; that's why we can undersell all. Send today for our low estimates on plumbing material.

**FREE CATALOG COUPON**  
**Fill Out, Cut Out, And Mail.**

Name .....

Town.....

County.....State.....

Shall we send 500-Page Catalog.....

Do you want our Plan book.....

What items in this ad most interest you?

.....

I am a reader of American Carpenter and Builder

---

**Address Chicago House Wrecking Co**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER





## Better Than Mixing Your Own Wood Stains

**M**ORE economical, too—is the use of Johnson's—ready prepared—Wood Dyes.

We don't need to tell you that *labor* is expensive, *mistakes* are expensive, a stain that's a bit off-color is expensive—mighty expensive in the long run.

As a thinking painter or contractor, you know that competition is keener today than it ever was, and that solid, lasting success is built only on the *right results*.

You cannot afford to trust to rule-of-thumb mixing which squanders yours or your workmen's time and *may* or *may not* produce the desired finish.

Give a workman Johnson's Wood Dyes and he will do an hour's work in an hour, the finish will be right, true to the natural beauty of the wood, and you and your customer will both be satisfied.

# JOHNSON'S Wood Dyes

**Actually Dye the Wood**

Within the past two years it has cost us over \$50,000 to insure your perfect satisfaction with Johnson's Wood Dyes. We have spent that money in research and experiment. We *know* regarding wood-finishing preparations what the "other fellows" have not yet begun to learn.

We import the colors used in Johnson's Wood Dyes—because we cannot find their equal in this country. Johnson's Wood Dyes alone make possible that rich, luxurious effect.

You can't get this rich, luxurious effect with the stains you mix or the so-called "stains" on the market. Water and spirit "stains" raise the grain of the wood.

Oil stains do not color the wood deeply and when used on oak, the color changes because of chemical action.

Varnish "stains" are not stains at all. They are simply surface coverings that often crack and peel and always give the cheap, painty, shiny effect.

Johnson's Wood Dyes are *Dyes*. They penetrate the wood; do not raise the grain; thus accentuate the high lights and develop all that is beautiful in the wood.

### Johnson's Dyes are Prepared in All Shades as Follows:

|                              |                          |                       |
|------------------------------|--------------------------|-----------------------|
| No. 131, Brown Weathered Oak | No. 121, Moss Green      | No. 110, Bog Oak      |
| " 172, Flemish Oak           | " 173, Brown Flemish Oak | " 128, Light Mahogany |
| " 126, Light Oak             | " 129, Dark Mahogany     | " 125, Mission Oak    |
| " 123, Dark Oak              | " 140, Manilla Oak       | " 130, Weathered Oak  |

Johnson's Wood Dye, any desired Shade, is sold by the best paint dealers. Insist on getting the genuine—don't take a substitute.

|                         |                       |
|-------------------------|-----------------------|
| Half-Pint Cans - \$ .30 | Quart Cans - \$ .85   |
| Pint Cans - \$ .50      | Gallon Cans - \$ 3.00 |

### Free Trial Offer:

We will send you absolutely free of charge—two cans of Johnson's Wood Dyes, your choice of shades, one can of Johnson's *Electric Solvo* for removing paint and varnish, and our handsome 48-page Text Book on "The Proper Treatment for Floors, Wood-work and Furniture." Take advantage of our offer now. Tear off the coupon, sign and mail to us today.

## S. C. Johnson & Son

"The Wood Finishing Authorities"

Racine - - - Wis.



## The Best Paint and Varnish Remover

**I**T'S one thing to remove paint and varnish from wood.

It's quite another thing to do it well—an absolutely clean job.

The surface left *just right* for re-painting or re-varnishing.

There's just *one* remover that's certain to accomplish *just the right* results on every kind of surface—and that's Johnson's Electric Solvo.

And it is "electric"—lightninglike—in the way it does its work.

It is unequaled for softening all old finish whether on wood, glass or metal, so that it may easily be removed with a painter's ordinary putty knife, leaving the surface bare and clean, ready for the new finish.

It is entirely free from all offensive odor. It will not injure the hands or the finest fabrics.

It will not soften glue in joints. Neither will it raise the grain of the wood.

It is semi-paste in form, and for this reason, you can use it successfully on all upright surfaces.



# JOHNSON'S Electric Solvo

**For Softening Old Finish So That It May Be Easily Removed**

It is a well known fact that old furniture, woodwork or floors can *not* be satisfactorily refinished without first removing the old finish.

Johnson's Electric Solvo is absolutely *unlike* any other paint and varnish remover. No matter what unsatisfactory experiences you may have had with other removers—the paint not drying properly over the new finish, etc.—*don't* set this product down as "another of the same sort."

Johnson's Electric Solvo *won't*—it *can't*—injure the new finish.

We'll tell you why:

All the paint and varnish removers that are worth anything at all are made, through license, under a certain patent.

The patent calls for a large percentage of paraffin and it is the quantity of pure paraffin, used in other paint and varnish removers that prevents your new finish from drying properly.

Now in Johnson's Electric Solvo, we use a special secret combination which contains only about one-fourth of the specified amount of paraffin.

As a consequence, Johnson's Electric Solvo gives the very best results in removing the old finish but does not leave an excess of paraffin to spoil the new finish.

Now you know why Johnson's Electric Solvo is the only safe paint and varnish remover for you to buy—and it costs no more than the unsafe kind.

The proof of all this is in our

## Free Trial Offer

A generous sample of Johnson's Electric Solvo, along with *two* sample cans of Johnson's Wood Dyes (your choice of colors). Fill out the accompanying coupon, clip it and mail it to us today. Address

**S. C. Johnson & Son**

"The Wood Finishing Authorities"

**Racine - - Wis.**

**FREE  
Coupon  
ACB-8**

**S. C. Johnson  
& Son  
Racine, Wis.**

Gentlemen:—My paint dealer's name is

His address is.....

for which please send me FREE, prepaid, two (2) samples of Johnson's Wood Dye ..... shades, and one (1) sample of Johnson's Electric Solvo, and copy of your new 25c book, "The Proper Treatment for Floors, Woodwork and Furniture." Edition ..... all FREE as per your offer.

My name is.....

My address is.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



## ONE PIECE SIMPLEX ROOFING NAILS

**"Simplex Nails"** have much thicker heads than a tin cap. This prevents buckling of the head, leakage and increases the life of the nail and roof.

**"Simplex Nails"** are made all in one piece. The stem is riveted **on both sides** of the head. You do not have to put them together as is the case with tin caps. This saves time—money—and prevents leaks.

**"Simplex Nails"** will cover four times as much roof surface as an equal number of any other kind. This means four times less time and nails in applying roofing. The thick heads resist rust. No leaks around the head.

If you specify **"Simplex Nails"** when ordering prepared roofing, it costs you no more. They can be furnished by any manufacturer or dealer. They are made 1 in., or 1½ in. long.

We will send **Free Samples** and important information about nailing prepared roofing to all who write.

**H. B. SHERMAN MFG. CO.**  
Battle Creek, Mich. *Write Today*



# CONGO



## NEVER LEAK ROOFING

**T**HERE is one kind of ready roofing which is absolutely waterproof and meets all the requirements of a ready roofing; that is Congo.

It is aptly known as the "never-leak" roofing.

But Congo is not only waterproof; it is also proof against heat, cold and acid fumes.

It is made to last and experience shows that it does last.

The strong point about Congo is the wonderful pliability. It bends like rubber, looks like it, and keeps the water out the same as real rubber would.

### FREE SAMPLE

Don't buy your roofing until you examine a sample of Congo; and remember, Congo samples are not special pieces prepared for the purpose, but are cut from our regular stock.

We mention this because Congo is so attractive looking, so tough and pliable that people sometimes think the samples must be specially prepared.

**UNITED ROOFING AND M'F'G. CO.**  
Successors to Buchanan Foster Co.  
**555 West End Trust Bldg., PHILADELPHIA, PA.**  
**CHICAGO** **SAN FRANCISCO**

direction, and then compressed into uniform sheets, cement takes the form of Asbestos "Century" Shingles, the ideal roofing.

Compacted under tremendous hydraulic pressure, Asbestos "Century" Shingles take on great density and toughness. The cement is driven into the substance of the asbestos fibers. As the concrete ages, it hydrates and crystallizes, locking the fiber and cement into a homogeneous mass that is inalterable by age or the elements.

Weather has no effect on the shingles. Dampness and freezing and thawing merely hasten the maturing of the concrete.

Fire cannot burn them or crack them—they protect the framework absolutely.

Hail cannot break them. The tramping of a lineman does no damage.

Asbestos "Century" Shingles literally "outlive the building without painting or repairs."

They are applied like any shingle or natural slate, preferably over a rough sheathing, though they may be nailed directly to the lath. Nails are easily driven through them by a quick sharp blow, without splitting or cracking. They are easily cut and shaped with ordinary tools, for fitting around curves and projections or for making flashings.

Being non-conductors of heat, these shingles keep the house exceptionally cool in summer and warm in winter.

Asbestos "Century" Shingles weigh only 250 to 375 pounds per square (about one-half the weight of slate). The roof frame may be lightened correspondingly—effecting a considerable saving, besides affording a better protection than the heavier material.

Builders and others who are interested in giving their clients the best to be had should get in touch with the Keasbey & Mattison Company, Ambler, Pennsylvania, sole selling agents—and mention the AMERICAN CARPENTER AND BUILDER.

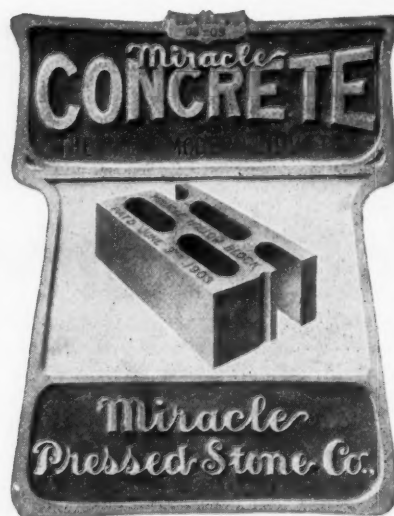
### New Miracle Book

The AMERICAN CARPENTER AND BUILDER is in receipt of a copy of the '08-'09 book of the Miracle Pressed Stone Company of Minneapolis. It is a handsome and profusely illustrated volume of 144 pages, and without any question it is the most sumptuous and elaborate publication of the kind ever issued

by a company in the concrete machinery field. Its pages teem with information valuable to the worker and with suggestions on all manner of construction. The book is sold for 25 cents but will be mailed free to interested persons. We quote the following from its pages:

"There has never been a year when capital was seeking so strenuously a profitable outlet, nor has there been a year

when opportunities for profitable investments have been so plentiful as is the present one. The reason is directly due to the condition of the times. There is abundant chance for success in any reasonable project. Surmounting all other fields for investment is that of concrete construction. There is none so inviting to the conservative investor from all points







ASBESTOS "CENTURY" SHINGLE ROOF AND SHEATHING—ESTATE OF DR. R. V. MATTISON, NEWPORT, R. I.; ARCHITECT, J. D. JOHNSON, NEWPORT; BUILDER, B. F. TANNER, NEWPORT.

## Asbestos "Century" Shingles

"The Roof that Outlives the Building"

By the "cost per year test" Asbestos "Century" Shingles are the cheapest roofing made—no repairs—no painting for either preservation or appearance. They are absolutely impervious to weather-wreck—cannot flake, split, corrode, rot or rust—do not break at the nail holes—are proof against damage by accident or fire. And their first cost is even less than a good many roofings considered as first-class.

Asbestos "Century" Shingles are uniform shingle-like sheets of asbestos-fibre-cement concrete, compacted and formed under tremendous hydraulic pressure. The cement hydrates and crystallizes as it sets, interlocking with the asbestos fibre web into a tough and elastic compound. Made in three colors—Newport Gray (light), Slate (blue black), and Indian Red, in numerous shapes and several sizes. Five cents per square foot (and upward) at Ambler, Pennsylvania.

The Keasbey & Mattison Company

Factors - - - - - Ambler, Pennsylvania.

SEND FOR OUR CATALOG. "HOME HEATING"

# HOT-WATER HEATED \$198

by ANDREWS SYSTEM EACH



14 ANDREWS HEATERS IN ONE BLOCK

AVERAGE PRICE \$198.00

IT IS WELL WORTH READING

## 1908 CATALOG Of Hot Water and Steam Heating

Our new catalog explains fully the principles and advantages of hot water heating, based on 18 years' experience in the cold Northwest, and describes how any carpenter or mechanic can erect the Andrews System in any building from complete plans and directions which we send with each heating plant.

This book should be in the hands of every contractor and builder. Send your address and names of others who expect to buy heating plants, and we will send our catalog postpaid. (See our special offer for such service.)

WE DO IT RIGHT IN 44 STATES, CANADA AND ALASKA. Our catalog contains a partial list of our customers from all parts of the country. Look them up and examine the Andrews System in your vicinity.

PRICES. We will sell you the plant with all material complete, pipe cut to fit so you can erect it yourself. The cost of each heating plant here shown is based on Minnesota climate and includes an Andrews Steel Boiler, richly ornamented radiators, for every room except the kitchen, pipe cut to fit, fittings, valves, gold bronze, brushes and all other material ready for use, with diagrams and directions so plain and simple that any man handy with tools can erect the plant and save money. You can in this way include the heating plant in your general contract for the building.

FACTORY TO USER. We design, manufacture, guarantee and sell each plant direct from Factory to User, giving you the lowest price for the value. Estimates free. ALL PLANTS GUARANTEED AND SOLD ON 360 DAYS' TRIAL FREE. Freight rates equalized. Old Houses Easily Heated.

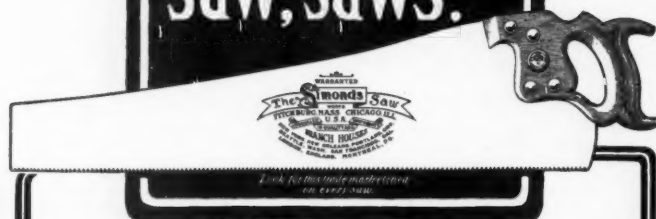
**ANDREWS HEATING COMPANY**

982 Marine Building, Chicago  
953 Heating Building, Minneapolis

MANUFACTURERS CONTRACTORS CONSULTING ENGINEERS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

**I never saw  
a saw, saw  
the way this  
saw, saws.**



From tip to handle the Simonds Saw shows the result of utmost care.

The very fit of the handle is exactly right to give a perfect grip with an easy "balance" and just the right "hang."

The steel from which the saw is made is the famous *Simonds steel*, made expressly for and used only in the Simonds Saw.

Its temper is as nearly perfect as human thought has yet achieved. Tempered by our own secret process it holds a keen cutting edge in a marvelous manner, requiring but little attention or sharpening.

When you buy the Simonds Saw you are getting the highest grade saw made.

Thousands of experienced carpenters testify that

### **SIMONDS SAWS ARE THE BEST**

#### **And They ARE The Best**

Protect yourself against imposition in buying saws by looking for Simonds trade mark. Whatever saw you find that on you are safe in buying, and *don't buy any other* unless you are prepared to be disappointed.

If your dealer does not keep the Simonds, let us know and we will see that you are supplied.

**SEND FOR "SIMONDS CARPENTER GUIDE"  
MAILED FREE**

This booklet will tell you about Simonds Saws and give other information of real interest and value.

**SIMONDS MANUFACTURING CO.**

**Fitchburg, Mass.**

Branches in leading cities

of view as in any one, or all, of the four big industries we are promoting.

"We have been remarkably fortunate with each branch. In every one we have found an exceptional and strong advantage over anything ever attempted along the same lines. In one branch we have incorporated the only successful principle to attain the desired end. In another we have contrived mechanism which has reduced the purchaser's investment by hundreds of dollars, and yet he is able to accomplish the better results. In a third we have reduced the labor by one-third, and so on. Concrete construction in itself has a bright outlook, and the field is barely opened. Yet beyond these two indisputable facts we offer this third and all important inducement, viz., the exceptional and unquestionable advantages of our machines and methods. These advantages we will point out and prove in the following pages. By them we can help you to business success, and together we will help the industry to greater achievements, which will naturally revert to our mutual interests.

"In any, or in fact all, of the branches of Miracle concrete construction, but very little capital is required. The making of Miracle Double Staggered Air Space Blocks; or of Miracle Sewer Pipe and Tile; or of Miracle Sidewalk Tile; or the making of Miracle Cement Brick, requires only a small outlay of money—the amount of a few months' savings will start one nicely and pave the way for a good business. This much can be done in any branch without devoting your entire time at first. It always pays for beginners to go easy, and "learn the ropes," so to speak, but it is not the beginners alone we are trying to interest.

"We want those who are already interested to branch out and enlarge. If you are making cement blocks, spend a little money and make more by entering cement brick manufacture. If you are making brick, go to making sewer pipe or building blocks also. Every branch of the concrete industry pays well, and calls for but little capital. Enlarge. Enlarge. The field is big. It is your opportunity to grow.

"There is no other business today that we know of where cost of equipment is so small, and profits so large. The investment in concrete construction business will vary according to the amount of business transacted. The larger your field and the larger you make it, the larger must be your equipment, but there is consolation in that, for the profits more than keep pace with the amount of money and energy you put into the business.

"Compare the investment required in cement manufacture with that required in the manufacture of pressed brick, tile, etc., from clay. The expensive machinery is in the first place almost prohibitive. Add to this the kilns for burning and the continual expense for repairs, fuel bills, etc. Yet these manufacturers prosper. In making a cement product you have only a simple mold to buy, and water is all that is needed to cure the product, and no expensive fuel to buy. The little capital required is sufficient alone to warrant a trial, but there are other advantages."

The cover design of the book is a photographic reproduction of a clay model and presents a very artistic effect. You should write for a copy.

#### **What Bill Said**

Supt.—"Say, Bill, what's this I hear about the new way you have to sharpen planer knives?"

Bill—"Well, I'll tell you; you know it has always been a big problem to keep our planer knives in good condition. It is one of my daily troubles. When the bevel wears down and grinding is necessary the knives must be taken out of the planer, a job that is a bother and an expensive one. When the knives just need touching up a bit, files can be used; but you know there is hardly a month goes by but what I get a call down for using so much money on files.





## FLOOR FINISH

is a TRIUMPH OF THE VARNISH MAKING ART

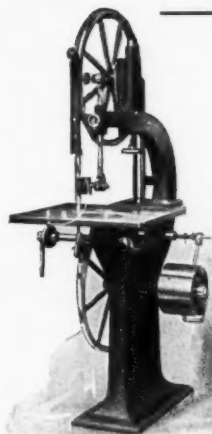
No other Floor Varnish or Floor Finish of a varnish nature is so tough, so elastic or so durable. It produces a smooth, handsome gloss finish unaffected by water or atmospheric conditions. It will not crack, chip or mark white.

If you are interested in a high-class article for floor work—a finish that is made to walk on and to stand the severe wear to which floors are subjected, write us for further information.

Our New Catalogue "D" listing our complete lines of "Nice" Varnishes, Fillers, Paints, Stains, Enamels, Colors, etc., will be ready very soon. We wish to send it to every reader of this paper who will write for it.

**EUGENE E. NICE**

272-274 So. 2nd St. PHILADELPHIA  
201-3-5-7 Spruce St.



## "Band Saws and Jointers"

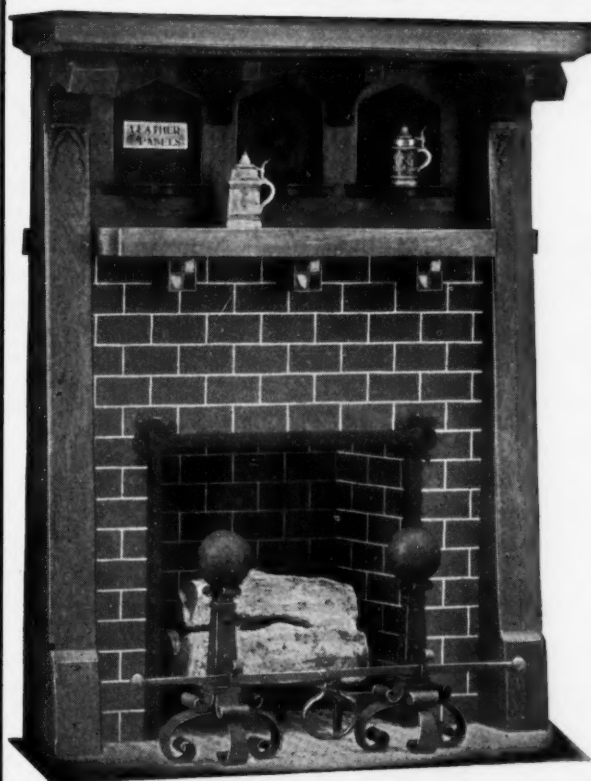
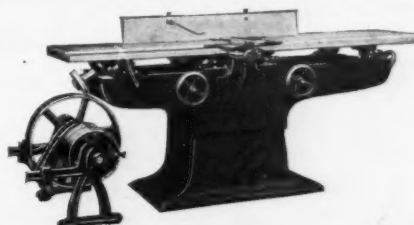
is the name of a new beautifully printed booklet illustrating our complete line of Foot and Belt Power Band Saws and our new Jointers.

Band Saws in four sizes, with 20, 26, 32 and 36 inch wheels. Rigid frame, cored out, new style base, wheels absolutely true. Every controlling part—the belt shifter, table tilting device, adjustments of upper wheel and saw guide—is within convenient reach of operator.

See description of new jointers elsewhere in this issue. Send for the Booklet.

**Silver Mfg. Co.**

350 BROADWAY : : SALEM, OHIO



## Pick Just the Mantel You Want

Here is one of many Lorenzen Mantels. You can take your choice of hundreds of others—Colonial, Craftsman, Early English and period styles in all woods and finishes. You know how much a mantel adds to a room—particularly

### LORENZEN MANTELS

They have a distinction of design and workmanship not possessed by any others. Our well-equipped factory, skilled workmen, large stock of air-seasoned lumber of every description, and years of experience making mantels, are a strong guarantee to you of quality and reliability. As for our prices—our immense output enables us to sell close and distance all competition.

**Free Catalog**—Let us send you the largest and finest catalog of wood mantels ever issued. Each copy costs us nearly \$1. But we send it free to any carpenter or builder. If you don't find what you want in it give us specifications and we will make to your order. Write for the catalog today.

**Tiles and Mosaics**—We furnish and set all kinds of Tile and Ceramic Mosaic work and will be pleased to submit designs and estimates on application.

**Chas. F. Lorenzen & Co.**

305 No. ASHLAND AVE., CHICAGO.

No. 468.—Modern Mission Style 5 feet 11 inches high and 5 feet wide; heavy plan-shelves, recessed leather panels; the brackets supporting main shelf are carved with Spanish Insignia. Forian-Vitrea tile hearth and facing. Hand-wrought Andirons of Romanesque design.



**STANDARD—Lock Joint—METAL SHINGLES**

**ORNAMENTAL  
EASILY  
APPLIED**

**GUARANTEED  
WEATHER  
PROOF**

We can save  
you money on  
**CORNICE  
SKYLIGHTS  
VENTILATORS  
METAL  
CEILINGS  
ROOFINGS  
SIDINGS  
EAVE  
TROUGH  
CONDUCTOR  
PIPE**



**CANTON  
Manufacturing  
Company**

**1310 to 1320  
East Second Street  
CANTON  
OHIO**

**ABSOLUTELY STORM PROOF**

**Cata-  
logue  
FREE**

# Amatite

## ROOFING



THIS advertisement will bring to your attention the best and cheapest ready roofing on the market. Here is how we prove it the best.

In the first place Amatite is made in one standard thickness, whereas other ready roofings range from a thin, flimsy half-ply to a three-ply thickness.

The three-ply thickness (which by the way is only one sheet of felt) is the only kind that can be compared with Amatite.

But right here is the point. Amatite is better made, has better waterproofing material, and weighs more per square foot than the three-ply grade of other makes, and costs much less.

These facts make Amatite the most desirable roofing made.

But in addition to its superiority in material and manufacture, Amatite has one distinction which makes it stand out above all others. It has a real mineral surface.

It is hardly necessary to state the advantages of such a mineral surface, the freedom from painting or coating, the perfect protection against all kinds of weather, the great durability.

This mineral surface is embedded in a layer of Pitch, the greatest known waterproofing material. Beneath this in turn are two layers of the best grade of wool felt—cemented together by more Pitch, making the whole a roofing that is absolutely waterproof.

No other ready roofing can compare with this mineral-surfaced, waterproof, weather-proof, durable roof. That's why we say—Don't buy your roofing until you have seen Amatite.

### FREE SAMPLE AND BOOKLET

Send for Free Booklet and Sample to-day. It will pay you to get acquainted with Amatite. Address nearest office.

## BARRETT MANUFACTURING CO.

New York, Chicago, Philadelphia, Boston, Cincinnati, Minneapolis, Cleveland, St. Louis, Pittsburg, New Orleans, Kansas City, London, Eng.

Simply can't help it. You can't get a file that will last longer than for one job, the planer knives are so hard.

"There have been two or three men in here with stones claiming they would take the place of both grinding and files; but not one of them made good, and we had to go back to the files."

Supt.—"Yes, Bill, I know it is a tough proposition, but I heard a rumor this morning about something new you had that was giving satisfaction."

Bill—"Yes sir! I was never more surprised in my life. I believe they call it the India Oilstone. Well, this fellow came in this morning with the same old story and he claimed this and that; but I laughed at him and gave the boys a wink. I took him over to the worst planer in the shop; the one I have been running that tough lot of oak through. He looked at it a minute and said 'Pretty tough test; but the harder the better.'

"He took out a stone and went at it, and by George! he put on an edge that is way ahead of both grinding and files. Couldn't quite understand how he did it until he took up a file and cut the corner out of it with the Stone in a jiffy. He left his card and is coming in tomorrow. I wish you would put in an order for some. We can't lose by it, for he guarantees every stone."

Supt.—"I will do so, Bill, at once. When he comes send him up. Anything else that is bothering you?"

Bill—"No; but there is a big load lifted from my mind on this planer knife question."

Note—India can be used without removing the knife; and no knife is too hard for the India Oilstone.—Sold by the Pike Mfg. Co., Pike, N. H.

### Quality Tools

We desire to call the attention of our readers to the line of tools of superior quality manufactured by the Belden Machine Co., of New Haven, Conn.

The material used in making these tools is one of the most noted and best of high grade American steels. Each article in the set is dropforged, which process thoroughly hammers and welds the already high grade stock making it even tougher and better. The tempering is done in the best and most scientific manner by careful and experienced workmen, who after years of practice have been able to practically eliminate all trouble and defects that so often arise in this delicate operation and make so many tools undesirable. The models are the ones approved of by all the users in the country. The reputation of these tools is international, which is the result of years of care, during which time nothing but a superior article backed by a liberal guarantee was placed upon the market.

In the hammer there are several points which deserve special mention. In the first place it is a handsome, perfectly balanced, almost indestructible tool, the superior workmanship and quality of which easily places it before all others. Aside from being a hammer it is a combination claw, punch and dresser. The white oak leather handle will not slip or cause the hand to blister, and will never break or wear out.

It is often found that a customer desires a tool especially suited to his own requirements. Careful attention is always gladly given to such; a stock of left-hand hammers is carried. Other specially made tools such as heavier or lighter hammers, longer or shorter stakes or rippers, can be gotten out at short notice, at slight extra expense.

### Advancement of a Great Industry

One of the foremost industries in the country is the manufacture of engines in the various types for power purposes. A striking example of progress in this line is best shown by the illustration of the new improved gas engine plant of the

# MOST POWER FOR LEAST COST

**The Sampson Gas Engine—Perfect for the Carpenter Shop** **\$119.<sup>75</sup>**

In simplicity of construction, low cost of operation, freedom from noise, great power and moderate cost, the Sampson stands without a rival—having more good features and less working parts than any other engine on the market.

There are no complicated parts and no springs to weaken and cause trouble. The few parts employed are strong and durable. It is very easy to start, and the average school-boy can start and operate it with ease.

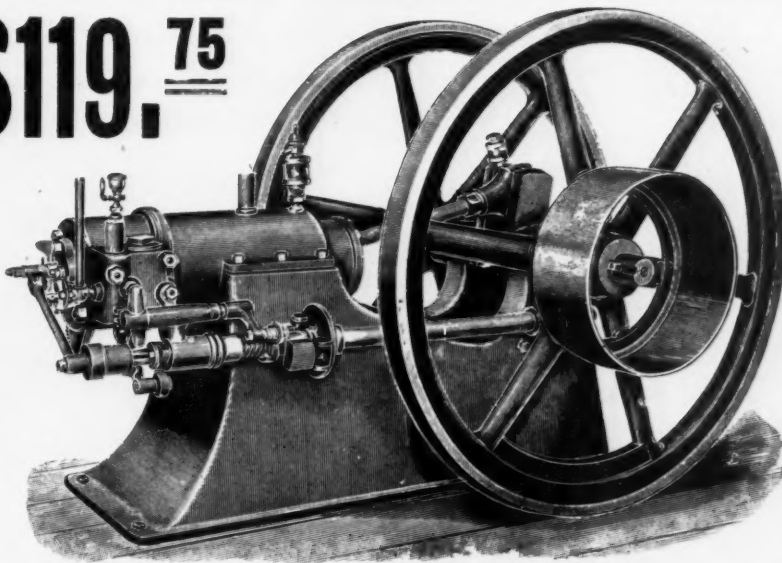
When you get the Sampson you get the simplest, most powerful and economical engine built.

As we own and control our own factory and patterns, we are able to sell Sampson engines direct from factory to you, saving you the middlemen's commissions. Our price represents cost to make plus our one small profit.

Sampson's are built in five sizes: 3-hp., \$119.75; 5-hp., \$150.00; 7-hp., \$195.00; 10-hp., \$324.00; 12-hp., \$336.00. Any size will develop from 10 to 20 per cent more than its rated horsepower.

Can be operated by gasoline, naphtha, denatured alcohol, distillates, producer gas and natural or artificial gas. We cover the Sampson engine with the most rigid and binding guarantee ever placed on a gas engine.

Write for our Sampson gas engine catalog.



**JONES BROS. MERCANTILE COMPANY, 1484 W. 9th St., Kansas City, Mo.**



## It Has Stood the Test

The Petz system of store front construction has stood the test of practical usage, and has the unqualified endorsement of hundreds of merchants, contractors and architects.

It offers superior advantages in strength, ease of installation and artistic finish and design. The most practical store front construction on the market. Endorsed by all plate glass insurance companies. Write for our booklet "Listen to Petz" today; it's free.

**DETROIT SHOW CASE CO.**

491 West Fort Street :: DETROIT, MICH.



**WRITE** to us for preliminary opinions on all legal matters. No charge unless retained. Associates throughout Continental Europe, Great Britain, the Colonies, South America and Canada enable us to investigate and prosecute foreign interests with dispatch. Our Pamphlet for the Asking.

**THE INDUSTRIAL LAW LEAGUE, Inc., 170 Broadway, New York City, New York**



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# EVERYBODY



## USES

### CLIMAX or VERIBEST

ASPHALT RUBBER

## ROOFING

### YOU CAN LAY IT YOURSELF

**It Costs So Little.** Costs one-fourth as much as shingles, and lasts twice as long. We are manufacturers. Our prices lowest. **We pay the freight.** We guarantee safe delivery—making good any damage or shortage of R. R. Co.

**So Quickly Done.** We ship from the nearest Branch Warehouse same day order is received. Roofing is in Rolls 108 sq. ft. each. Covers 100 sq. ft. of surface. All materials furnished. Anybody can lay it who can drive nails. Can be laid over old shingles.

**So Durable.** Long fibre felt—every thread thoroughly saturated with pure Asphalt. No coal tar. Coated with pure Asphalt. Light—strong—elastic—almost everlasting—more so than metal or shingles. Adapted for flat or pitched roofs, and for sides.

**Weather-Resisting.** Coldest weather can't damage it, nor make it hard or brittle. Always flexible and elastic—can't crack, chip, buckle, or shrink. Will not melt or get sticky in hottest weather. Cannot dry out, rot or rust. Soft and pliable like a sheet of rubber—clings close and snug to any roof. Snow, rain, wind and sun can't affect it.

**Fire-Resisting.** Contains no tar or other inflammable material. Spark and fire-brand proof. Insurance companies make same rate as on tin and iron roofs.

**Guaranteed.** If goods are not exactly as claimed, return them and we will refund your money. Is that plain? Your own judgment tells you we must make and sell you the best roofing to stand that plain guarantee.

**Free Book and Samples.** Write today for our Roofing Book, Samples and Prices.

**McHenry-Millhouse Manufacturing Co.**  
STA. D, SOUTH BEND, IND.

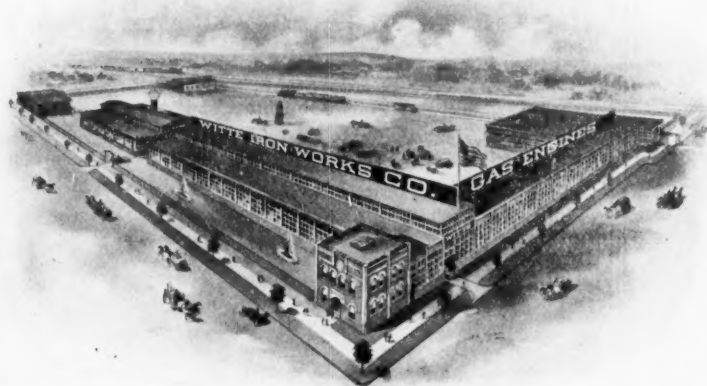
### COLUMNS FOR CONTRACTORS

OUR SPECIALTY IS TO SAVE YOU MONEY



**CANTON FOUNDRY AND MACHINE CO.**  
CANTON, OHIO, U.S.A.

Witte Iron Works Co., of Kansas City, Mo. After thirty years' experience in this line this company has become a central figure in the gas engine trade. The illustration shows the convenient arrangement for the manufacturing and turning out a complete line of gas and gasoline engines. This

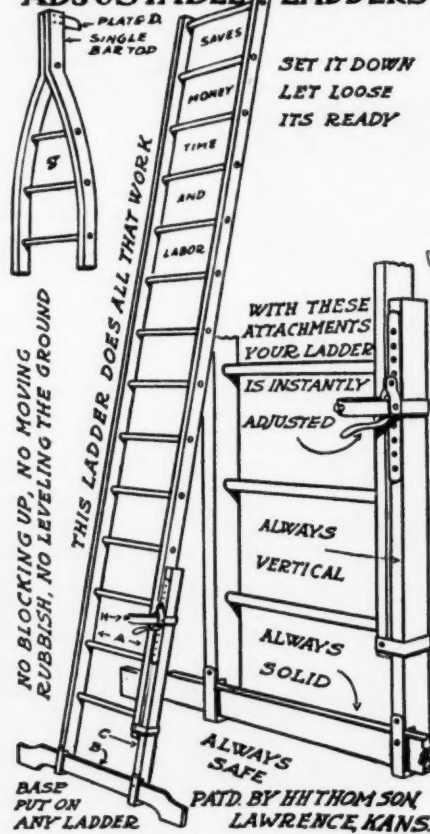


plant is equipped with machinery of the latest type, operates its own complete electric and water systems and private gas wells. Engines are built in sizes 2 to 100 h. p., in the stationary, portable, hoisting, pumping and electric lighting type. The plant has an output of 3,000 engines per annum. No other machinery is manufactured, being one of the few exclusive gas engine manufacturers of the country. Write today for catalogues, mentioning the AMERICAN CARPENTER AND BUILDER.

### The Adjustable Ladder

The Adjustable Ladder, shown in the diagram, is a radical improvement upon anything of this kind ever before patented.

### ADJUSTABLE LADDERS



Its main features are entirely new, and it offers a number of advantages which will make it indispensable, in some lines of work, while for every possible use to which a ladder may be put, this adjustable ladder is a decided advance over any kind now on the market.

Briefly, its advantages are: It is always vertical, and always solid; it is instantly adjusted; it saves labor, time and money. The principle of its construction is simple: One of the side-bars is formed of two pieces, C and A, so connected that the pressure of a

small lever, H, releases the clamp and allows the smaller



**"STAR BRAND"**

**Copper Roofing Material**

Carried in Our New York Warehouse ready for immediate shipment

Copper Leader or Conductor Pipe  
Copper Eaves Trough, Copper Elbows

**SHEET COPPER**  
OVER 500,000 POUNDS  
SOFT AND COLD ROLLED, ALL SIZES AND THICKNESSES  
In Stock in New York ready for Prompt Shipment

SOLDERING COPPERS      HALF-AND-HALF SOLDER      COPPER NAILS  
SHEET ZINC      BRASS CORNICE BOLTS

Catalogue Showing Full Line Mailed On Request

**U. T. Hungerford Brass & Copper Co.**  
497-505 PEARL STREET, NEW YORK

Keep your **BLOCK PLANES**  
— and —  
**BEVEL PROTRACTORS**

IN GOOD CONDITION—  
BY NOT USING THEM

GET A  
**FOX TRIMMER**  
Our new Catalog No. 85 on request



**FOX MACHINE COMPANY**  
756-776 N. Front St.      GRAND RAPIDS MICH.

**SHRP - SHAVR**  
**Safety Razor**

**25c**



There is No Better Razor Sold AT ANY PRICE

Shrp - Shavr Razor with One Blade 25 cents  
Shrp - Shavr Blades, 5 in a Package, per package 25 cents  
Shrp - Shavr Stropers 10 cents

From your dealer or post-paid on receipt of price.

Sold under a positive guarantee — Your Money Back if you want it.

SHRP - SHAVR RAZOR CO.  
108-110 Duane St., NEW YORK

We sell it at 25c to create a quick and large market for our blades because we make the BEST blade. In fact, "it's all in OUR Blades."

The frame or blade-holder is beautifully silverplated, and the adjustment is absolutely correct. It fits the face. The blade can be adjusted or released instantly. But you don't shave with a razor frame whether it costs \$5 or 25c; the blade is the thing. Our proposition is a revelation and revolution in safety razor selling. The Shrp-Shavr is the ORIGINAL 25c RAZOR.

**SHRP SHAVR**  
TRADE MARK

Not the lowest-priced, but the  
lowest-cost.

## Genasco Ready Roofing

Saves repair-money and time and trouble.  
Made of Trinidad Lake Asphalt, the greatest  
weatherproofer in existence.

Gives you longer roof-protection than any  
other ready roofing at any price.

Mineral or smooth surface. Insist on  
Genasco. Look for the trade-mark.

Write for Free book 76 and samples.

THE BARBER ASPHALT  
PAVING COMPANY



Largest producers of asphalt, and largest  
manufacturers of ready roofing in the world.

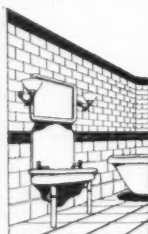
PHILADELPHIA  
NEW YORK  
SAN FRANCISCO CHICAGO

**DIRECT  
FROM  
FACTORY**

**DEALER'S PRICE  
for this outfit would  
be \$35 to \$40**

*Shipped on Approval*

This mantel, No. B. 27, is made of selected  
figured Golden Oak. It  
is 80 inches high, 54 or  
60 inches wide; 28x16  
Bevel Plate Mirror, Has  
Quarter Sawed Oak col-  
umns of 3 inches in di-  
ameter. Tile facing, 60  
x18 inch hearth and  
black finished grate and  
frame.



**Flooring** For room 10 x 12 ft. **\$9.60**

Genuine Red Oak,  $\frac{3}{4}$  in. by  $1\frac{1}{2}$  in.—Sea-  
soned, Matched, ready to lay. Price per 100  
square feet, random lengths, quality guaran-  
teed, \$8.00. Cheaper and better than a good  
carpet. Sanitary—artistic—durable. Quick  
shipment.

**TILE** your Bathroom, Kitchen and Vesti-  
bule, your Store or Bank Floor. I  
can save you money on the only Per-  
fect Sanitary Wall Covering made.

Write for complete catalog of Mantels, Grates, Tiles for floors and  
baths, Slate Laundry Tubs, Grilles, etc. It is **Free**. Or send  
10 cents to pay postage on our Art Mantel Catalog. Mantel Out-  
fits from \$12 to \$200.

WM. G. OSTENDORF, 2927 N. Broad St., Philadelphia, Pa.



No. B 27 Mantel

piece, C, to slide along the side of A till the base piece rests  
firmly along its entire length, the ladder itself maintaining  
its vertical position.

This ladder eliminates the need of moving rubbish or of  
blocking or wedging up. It removes the necessity of leveling  
the ground or of jabbing the long leg of the ladder into the  
hard soil. The Adjustable does away with the necessity for  
all this work and holds the ladder solid. This enables one  
to spend the entire time at profitable work. You can accom-  
plish more in the same amount of time on a safe ladder than  
on one that shakes, tips or slips.

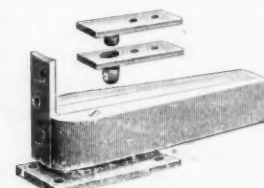
No time is lost in getting the Adjustable ready to use or  
in hunting a place where it will fit. It can be set up on a  
side hill, stone pile, brush heap, or a level floor, and will fit  
equally well in any of these places. Place it anywhere, re-  
lease the clamp and the ladder is ready to use.

No matter what you are doing or in what kind of work  
you are engaged, there is no money in spending a lot of  
time in getting a ladder ready to use. The more time you can  
spend at actual work the more you can make. Remember,  
too, that you can work faster on a ladder that is always  
solid and always safe.

Every reader of the AMERICAN CARPENTER AND BUILDER  
is interested in this ingenious, labor and time saving ladder,  
and should write today to the Adjustable Ladder Co., Topeka,  
Kan., for full information in regard to it.

### Shelby Spring Hinge

The attention of our readers, and especially those who are  
interested in door hinges, is called to the Shelby Chief  
Double Acting Floor Hinge, one  
of which is illustrated here.



One of the features which com-  
mend it to practical men is the  
fact of its resting on the floor in-  
stead of being placed in a hole in  
the floor, which is the method  
generally adopted. The result of

this is that the working parts are immune from water and  
dampness, consequently from rust and short life.

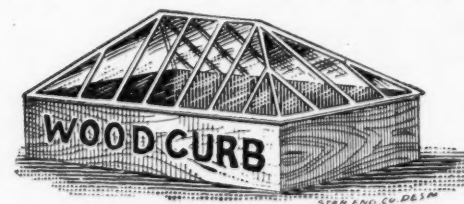
Another point that is causing interest among carpenters  
and builders is the simplicity of the way it is applied and  
the short time necessary to do it.

We feel sure any device such as this that means a saving of  
time is sure to be well received by our readers.

Address The Shelby Spring Hinge Company, Shelby, O.,  
for full information.

### Sykhlight Perfection

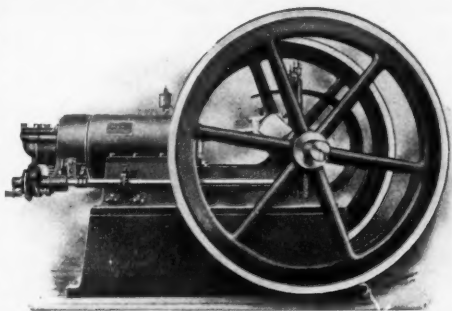
In connection with what is said in another part of this  
magazine in favor of the saw-tooth, skylight roof, for shops



and factory  
buildings, it is  
interesting to  
notice that the  
chief advan-  
tages of that  
form of con-  
struction,

namely, good ventilation and uniform distribution of light,  
are secured just as satisfactorily and at a much less expense  
by the use of improved skylights such as are manufactured  
by the St. John & Barquist Company, Des Moines, Iowa.  
The experts of this company have been working at the  
problem of a perfect skylight construction for a good many  
years. In their single pitched, double pitched and hipped  
windows they have produced skylights that are strong, hand-  
some, durable and waterproof; more than that, the prices are  
exceptionally low.

Every reader of the AMERICAN CARPENTER AND BUILDER



## WITTE GAS AND GASOLINE ENGINES

Are known by their Superior Construction. Will do your work at one cent horse-power hour, saves hiring help, does better work and more of it.

### FIVE YEAR BOND GUARANTEE

Bronze bearings, vertical valves, automatic oilers, close speed regulation, easy to start, no fire danger.

**SPECIAL OFFER** to introduce our engine in new localities. Write today for Catalog "Q" stating size wanted.

**WITTE IRON WORKS CO.,** 522 West Fifth Street  
KANSAS CITY, MO.

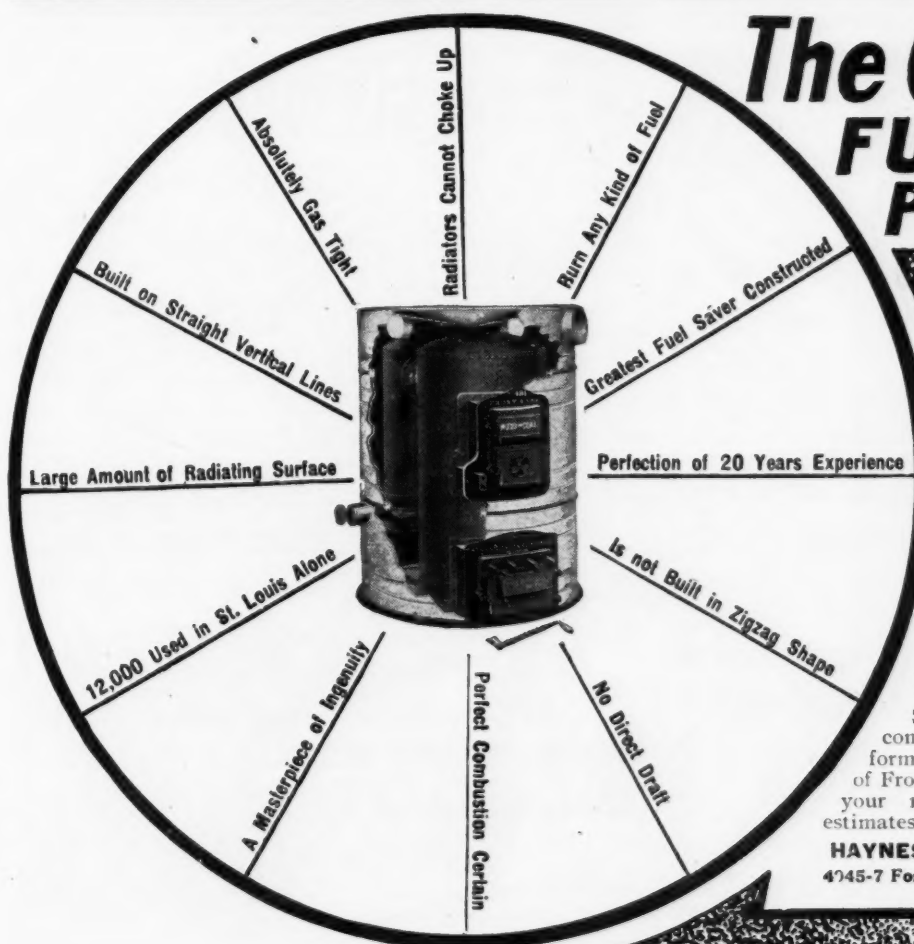
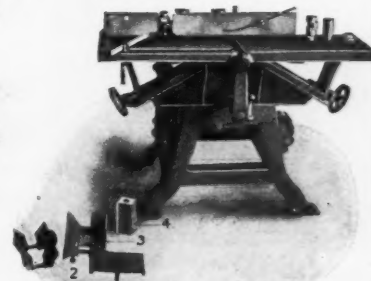
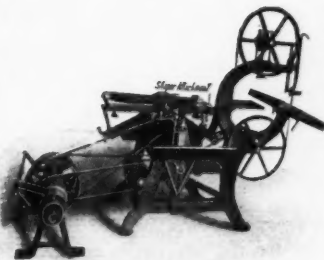
## "DEFIANCE"

Cuts shown in ad will give you an idea of our latest improved

**Variety Woodworker**  
*Six Distinct Machines in One*

Write for catalogues and full descriptive matter.

**THE SIDNEY TOOL COMPANY**  
Sidney, Ohio



## The Center of FURNACE PERFECTION

Twenty years of manufacturing experience enables us to offer the **Front Rank Furnace** as positively the most sensible and practical, durable and safe furnace on the market.

The straight vertical lines of its construction is assurance of the highest efficiency. The unusual amount of radiating surface means economy. The fire pot proper is lined with genuine fire clay tiling which guarantees extreme durability.

Send for our latest catalog. It contains very valuable heating information and tells the whole story of Front Rank Furnaces, or tell us your needs—we don't charge for estimates.

**HAYNES, LANGENBERG MFG. CO.**  
4745-7 Forest Park Blvd., ST. LOUIS, MO.



# ARE YOU Going to Build?



should look further into the merits of these improved skylights, and should also become acquainted with the fine line of roofings, steel ceilings, cornices and sheet metal work handled by the St. John & Barquist Co.

## Specialties in Copper Roofing Materials

The increased consumption of Copper in Architectural Work has doubtless been apparent to even the ordinarily observant mind. For many years it has been customary to use copper in the large buildings, such as churches, office buildings, Government buildings, and others of considerable magnitude, and it is only within a comparatively short period that the use of copper has become more general in the construction of residences and other buildings of moderate cost.

There are various reasons for the selection of copper material for architectural purposes:

**Durability.**—Not being affected by atmospheric changes, there is no rusting or corroding, making it practically indestructible.

**Beauty, Color and Design.**—Copper being of a ductile nature is readily worked up into most pleasing designs, by spinning, stamping and hammering without detriment to the metal, and the later coloring, due to exposure, makes a lasting and pleasing effect not obtainable with any other metal.

**Comparative Cost.**—Considering the durability and the fact that it is unnecessary to paint, and rarely to repair copper, coupled with its value even as scrap metal, the comparison is much in favor of copper.

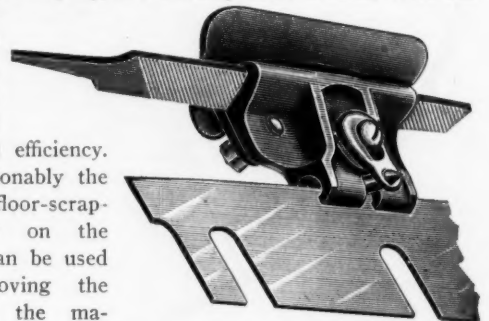
So-called galvanized iron, which is generally galvanized steel, and which is used extensively for the manufacture of gutters and leaders, has the merit of cheapness to one who considers only the first cost, but at the end of ten years or so when the leader or gutter has been replaced three or four times, the question naturally arises as to the economy in the long run.

The price of copper at the present time is low, and consequently the cost of copper leader, gutter and other roofing material is much less in proportion to the price of galvanized iron or tin plate, than for many years.

To those who are contemplating the erection of new buildings, or making additions or repairs to their present buildings, it seems a most opportune time to call attention to the use of copper in preference to the cheaper materials. One of our advertisers, the U. T. Hungerford Brass & Copper Company, whose advertisement appears in this issue, page —, makes house, at 497 Pearl street, N. Y., they carry an extremely large and well assorted stock of all copper material that is required in the line of roofing work. The reputation of this well-known house stands back of the material they offer, and intending purchasers of material in their line will do well to communicate with them.

## Weber Automatic Sharpening Device

The automatic sharpening device made by the Weber Manufacturing Company, 670 Seventy-First avenue, West Allis, Wis., deserves special mention in our columns as a model of simplicity and efficiency. It is unquestionably the most perfect floor-scraper sharpener on the market and can be used without removing the blades from the machine. It requires no skill to keep the blades in perfect order,



**SHULTZ MODERN Store Fronts**  
of Steel and Brass CORK BEDDED  
CORNER POSTS, MULLIONS AND TRANSOM BARS

Handsome, Strongest and Most Practical Bar on the Market. Long Life—nothing to rot out. Glass Bedded on Spanish Cork, preventing cracking or crushing of glass. No putty, yet ABSOLUTELY WATER AND DUST PROOF.

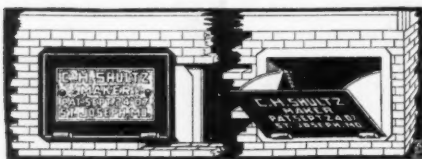
Simply incomparable with old fashioned styles. They add Immensely to the Beauty, Utility and Rental Value of Buildings.

**ARE LOW IN COST.**  
Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates.

Also Shultz Patent Burglar Proof Coal Chutes.  
All Steel Cork Bedded and Ventilated Bottom Bar

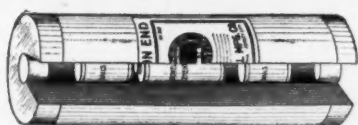
**C. H. SHULTZ, MANUFACTURER, ST. JOSEPH, MO.**

## ALL-STEEL BURGLAR-PROOF COAL CHUTE



The Neatest, Strongest and Most Convenient Coal Chute Made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

**C. H. SHULTZ, Manufacturer, St. Joseph, Mo., U. S. A.**



## Here's the Roofing You Ought to Use

Just as ready roofing has demonstrated its superiority over shingle, slate and tin roofs, so has MONARCH Asphalt Roofing conclusively proven its superiority over the usual ready roofing.

Genuine asphalt is acknowledged to be the most satisfactory roofing saturation and coating so far known. We use genuine Pitch Lake Trinidad Asphalt and all wool felt in the manufacture of MONARCH, and our method of applying the asphalt saturation, coating and mineral surfacing makes MONARCH a solid and perfectly combined whole — impervious to water and proof against flying fire-brands.

Know what you are buying — there is no substitute for genuine asphalt roofing. Send for Sample Set M-2.

Carpenters and Builders.—We know Monarch will justify our claims. You cannot find a better Roofing at any price. We earnestly desire you to give it a trial. If your dealer does not carry Monarch we will see that you are supplied direct.

**Stowell Mfg. Co., Jersey City, N. J.**  
Philadelphia Chicago Kansas City

"Creole"  
"Etowah"  
"Cherokee"  
"Kennesaw"

## Georgia Marble

THE GEORGIA MARBLE CO., - - TATE, GA.

**\$3,000 TO \$10,000 A YEAR**  
**IN THE REAL ESTATE BUSINESS**



We teach you by mail every branch of the Real Estate, General Brokerage, and Insurance Business, and appoint you **SPECIAL REPRESENTATIVE** of the oldest and largest co-operative real estate and brokerage company in America. Representatives are making \$3,000 to \$10,000 a year without any investment of capital. Excellent opportunities open to YOU. By our system you can begin making money in a few weeks without interfering with your present occupation. Our co-operative department will give you more choice, salable property to handle than any other institution in the world. A Thorough Commercial Law Course **FREE** to Each Representative. Write for 62-page book, free. **THE CROSS COMPANY, 1722 Reaper Block, Chicago**

## SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards  
Structural and Plumbers' Slate*

**SATISFACTION GUARANTEED IN QUALITY AND PRICE**

**ASK FOR DELIVERED PRICES**

**J. K. HOWER, Station C., Slatington, Pa.**

H. J. KICHLIN, Sales Agent

### DO YOU WANT SLATE?

**R**oofing Slate for Houses, Barns, Sheds and Railroad Stations. Clean and ornamental, rain, wind and fireproof.  
**B**lackboards for Schools, Colleges, etc., are being used all over the World, need no better commendation, "It is just the thing."  
**S**tructural and Electrical Stock, Steps, Sink Tops, Wash Tubs, Window Sills, etc., superior to all other stone for such purposes.  
**S**laters' Supplies, Hand-made Slaters' Tools, Snow Guards, Slaters' Cement, Nails, Felt, Slate Punching and Cutting Machines, etc. Write for prices and I will tell you all about Slate. **D. McKenna, Slatington, Pa. U. S. A.**

**WANTED:** To manufacture special tools. We take contracts for stampings and manufacture patent specialties and novelties in metal of all kinds. **NATIONAL STAMPING & ELECTRIC WORKS, 153-159 S. Jefferson St., Chicago, Ill.**



Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send this Scale. Back inches are divided into 6, 10, 12, 16, 20 and 40 parts. Also free catalog on request. See our two-page ad in American Carpenter and Builder for January, 1907. **ANDREWS HEATING CO., 949 Heating Bldg., Minneapolis. 978 La Salle Bldg., Chicago.**

### Rider Agents Wanted



in each town to ride and exhibit sample 1909 model. Write for Special Offer. **Finest Guaranteed 1909 Models \$10 to \$27** with Coaster-brakes and Puncture-Proof tires. **1906 & 1907 Models all of best makes \$7 to \$12** **500 Second-Hand Wheels \$3 to \$8** All makes and models, good as new. **Great Factory Clearing Sale. We Ship On Approval** without a cent deposit, pay the freight and allow **TEN DAYS' FREE TRIAL.** Tires, coaster-brakes, parts, repairs and sundries, half usual prices. Do not buy till you get our catalogs and offer. Write now. **MEAD CYCLE CO., Dept. F-122 Chicago**

ESTABLISHED 1884

**THE E. J. JOHNSON CO.**

38 PARK ROW.  
New York

**Slate Blackboards**

Producers of

Branch Office  
626 Park Building, Pittsburg, Pa.

**Large Stocks**

**Prompt Shipments**

**Correspondence Solicited**

## ROOFING SLATE



**EUGENE DIETZGEN CO.**

NEW YORK  
SAN FRANCISCO

181 Monroe Street, CHICAGO

NEW ORLEANS  
TORONTO

**DRAWING MATERIAL**

Drawing Instruments, Drawing Paper, Blue Print Paper, Tracing Cloth Builders' Levels  
Everything for Drafting and Surveying. Send for catalogue A

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# Down Goes LUMBER!

**1/3 OFF ON  
CARLOTS**

**Sawmill Prices to  
Carpenters and Contractors**

**1/3 OFF ON  
CARLOTS**

## Get Out From Under the Retailer's Thumb!

Backed by the state and national organizations of the Lumber Trust, the retail dealer for years succeeded in keeping the local carpenters and contractors under his thumb.

By means of secret agreements among themselves, they absolutely cut out competition. Prices were practically the same at every yard. The builder was absolutely at the mercy of the retail lumber dealer.

How is it in your town? Are you under the thumb of some retail dealer who assumes to tell you what you must pay for lumber and millwork?

## We Make You Independent of the Retail Dealer

This intolerable situation is being rapidly changed by this great lumber and millwork concern. **We undersell dealers everywhere.** You can buy all the lumber and other building material you want—straight car loads of lumber or "mixed" cars—(lumber and millwork)—at an enormous saving. We are independent of trust dictation. We will make you the same prices—and on many items **lower prices**—than your local dealer pays. We ship everywhere—treat our customers right and hold their trade by giving **more for the money** than can be obtained anywhere else in the United States.

Our thousands of friends in the carpenter trade—in all branches of the building line—are making more money on their contracts than ever before. We are in the fight to stay, and with the loyal support of the carpenters and builders of the country this great movement for **lower prices** will save millions of dollars that would otherwise go into the pockets of the Trust.

Are you with us? Send us the order for the next bill of lumber and get your share of the saving.

Yours truly,  
Gordon-Van Tine Co.

## \$100 TO \$300 SAVED ON EVERY CAR LOAD!

**SAWMILL  
PRICES!**

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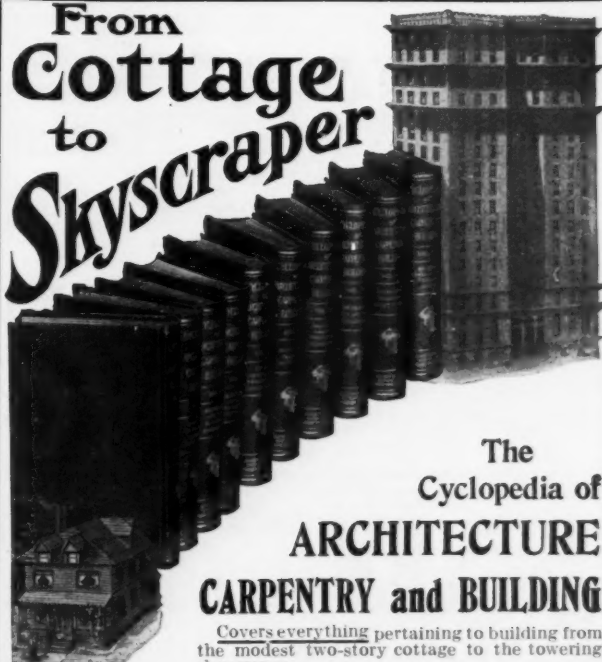
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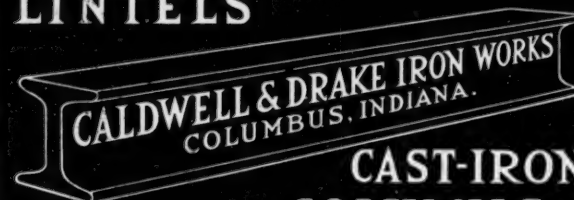
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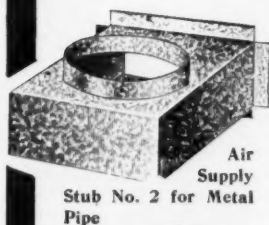
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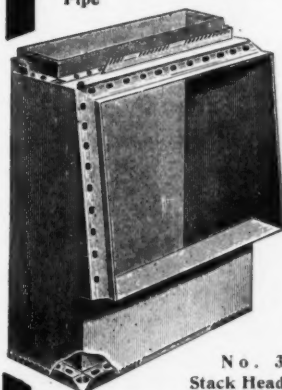
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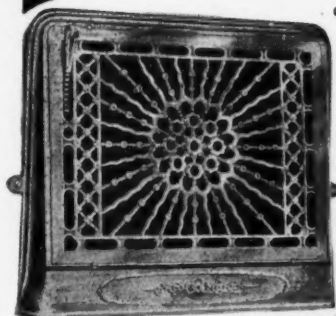
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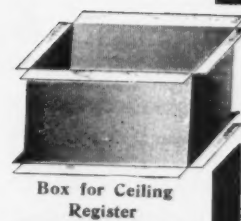
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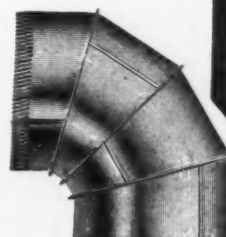
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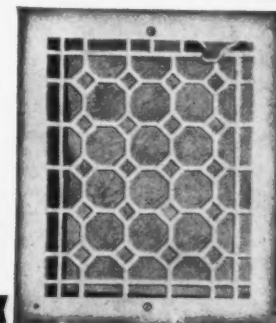
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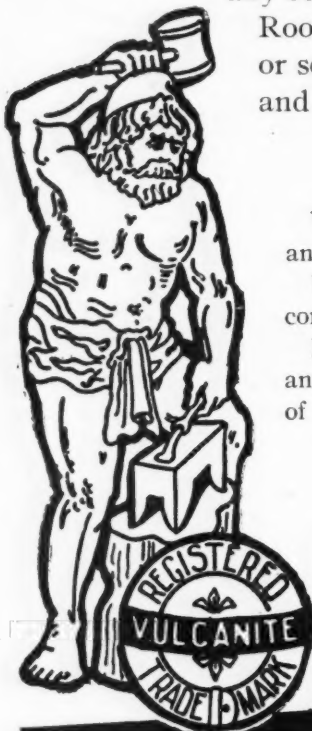
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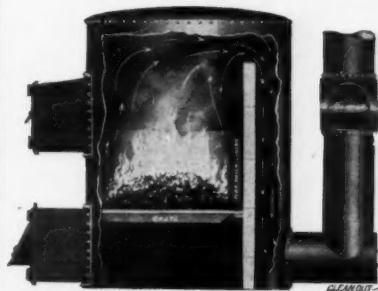
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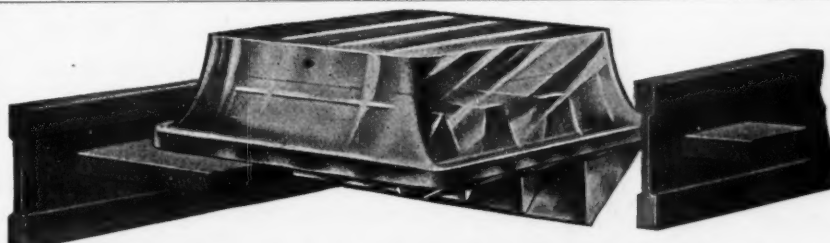
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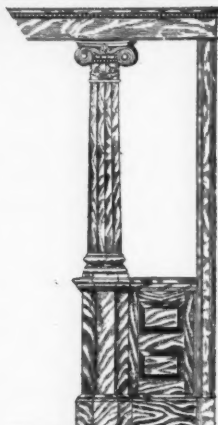
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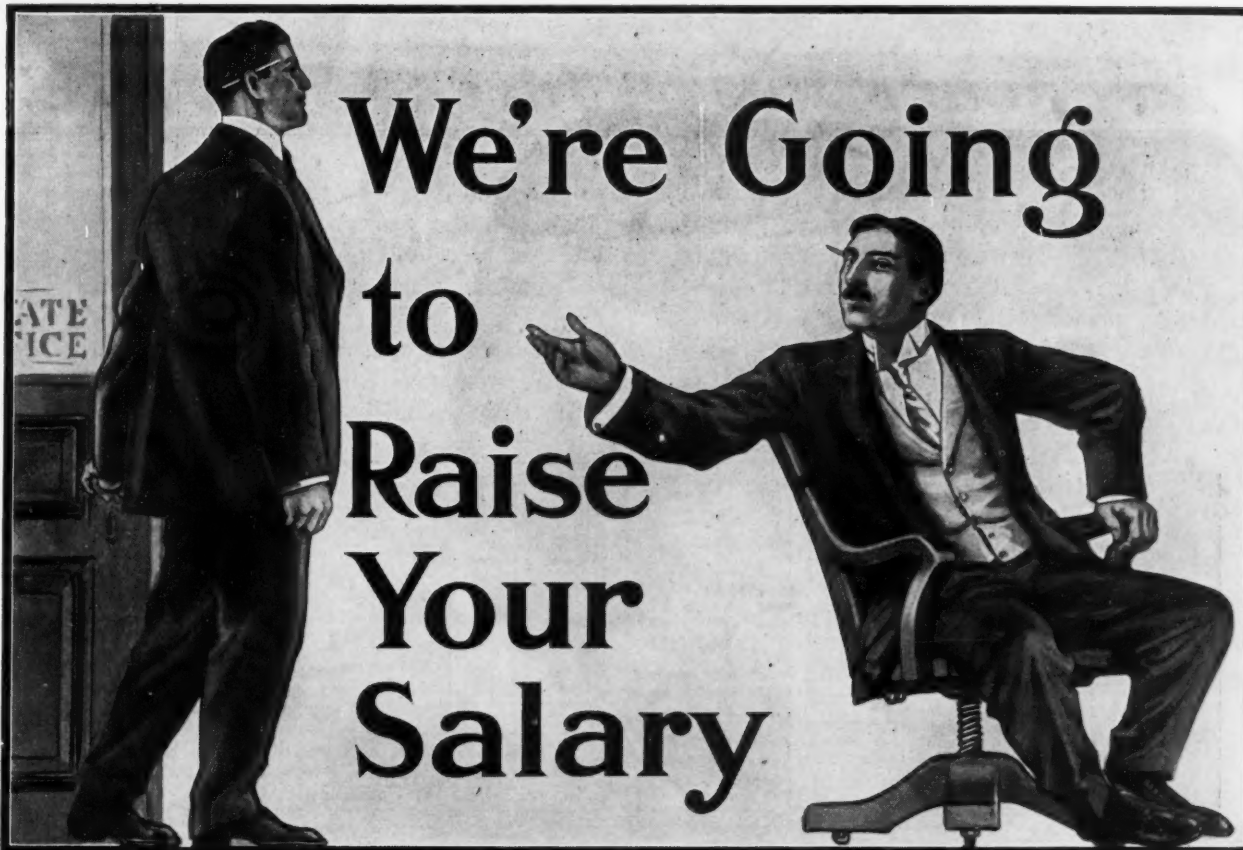
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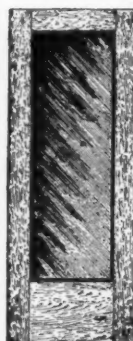
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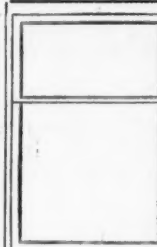


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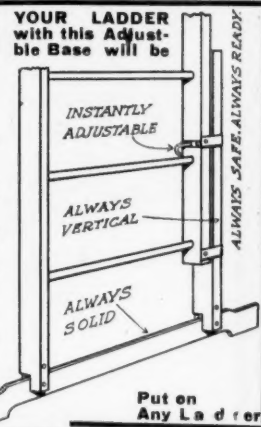
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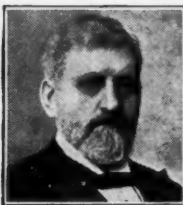
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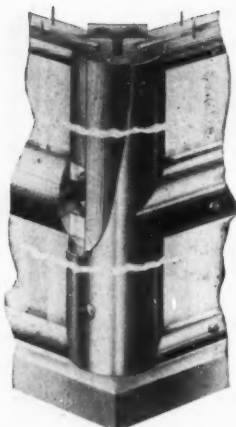
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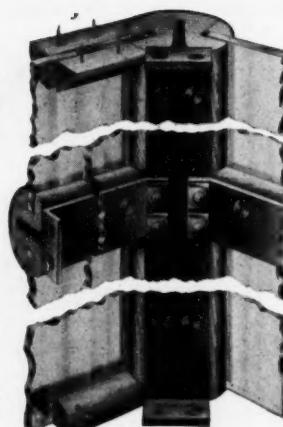
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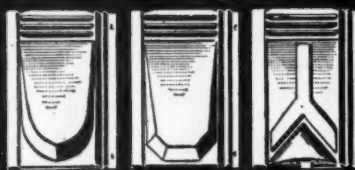
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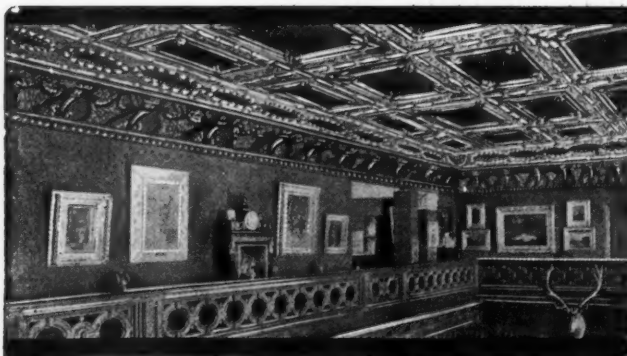
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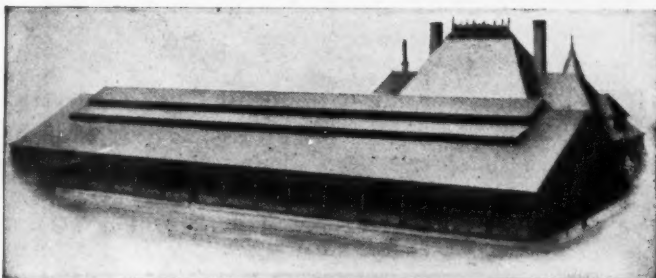
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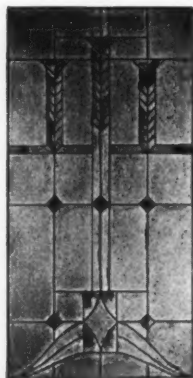


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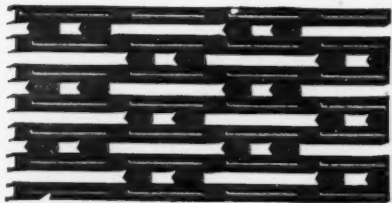


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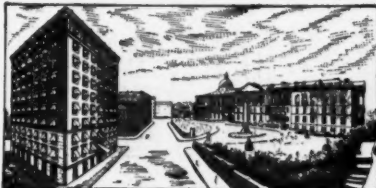
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**Industrial Publication Co.**

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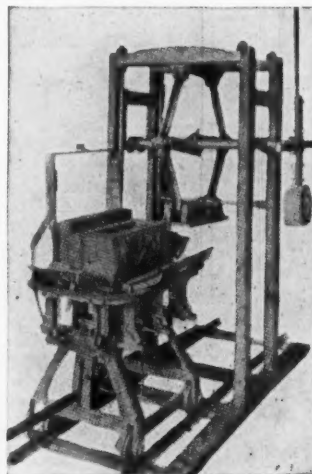
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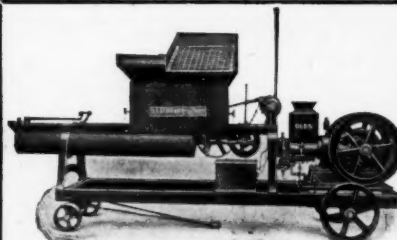
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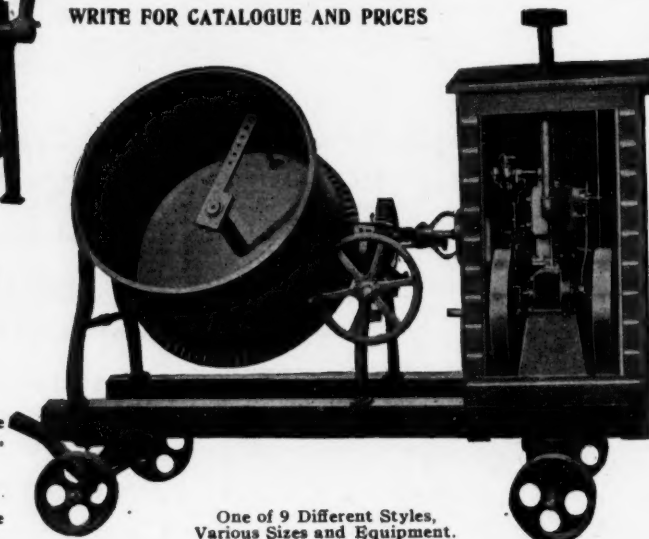
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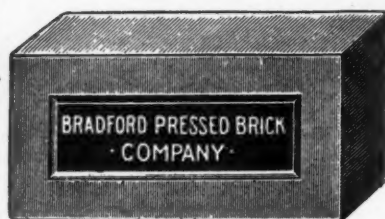


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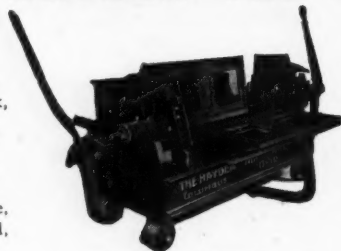
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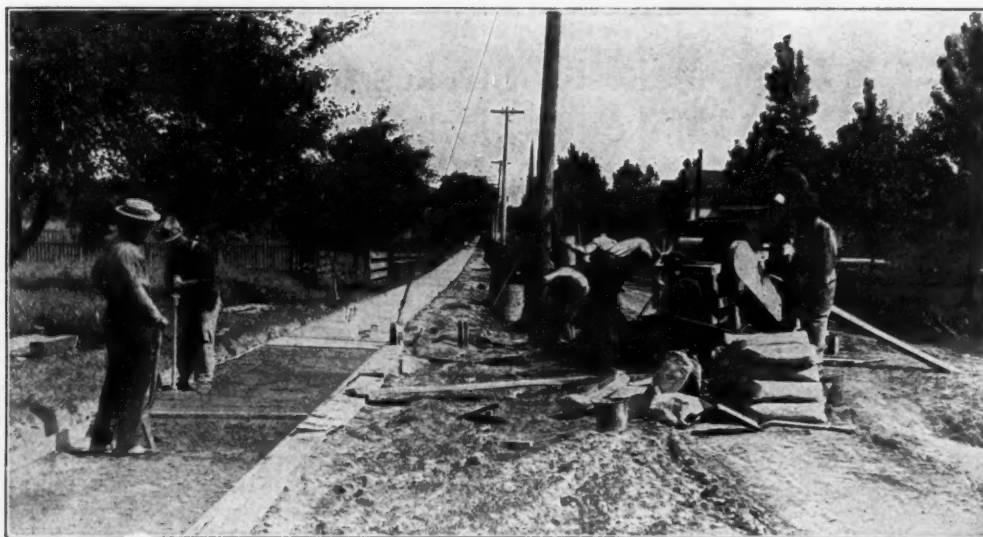
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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



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THE KNICKERBOCKER CO., JACKSON, MICH.

FORT WAYNE, IND., JUNE 10, 1908.

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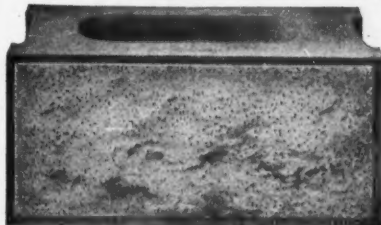
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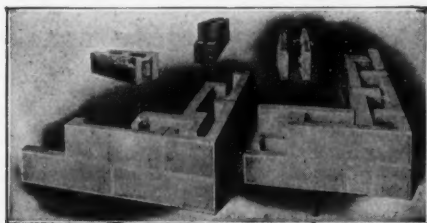
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Make 100 Strokes to produce a block  
Make 100 Blocks a day

## WHEN

You can produce a block with one stroke  
You can make 2000 Blocks a day on  
a machine that don't cost any more.

We could not show cut of Multiplex here and do it justice. But our catalog "R" illustrates and explains it in every detail.

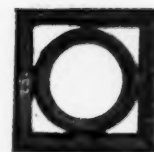
You can make all styles and sizes as well as chimney block on the one machine.

These statements are not advertising statements, we can prove it. Write

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### THE MULTIPLEX CONCRETE MACHINE CO.

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Send for our illustrated catalog. It shows what the machine is and just how it works.

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By the Pettyjohn System

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New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than August 20 in order to insure insertion in the August number.

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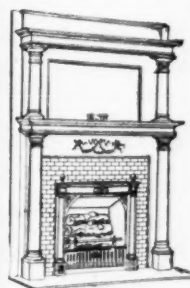
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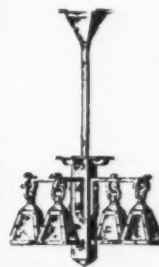
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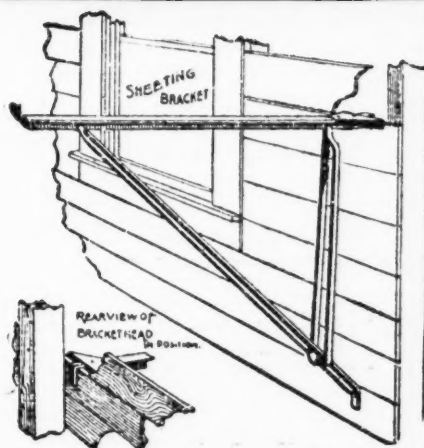


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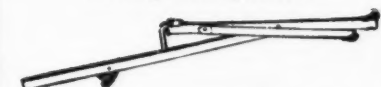


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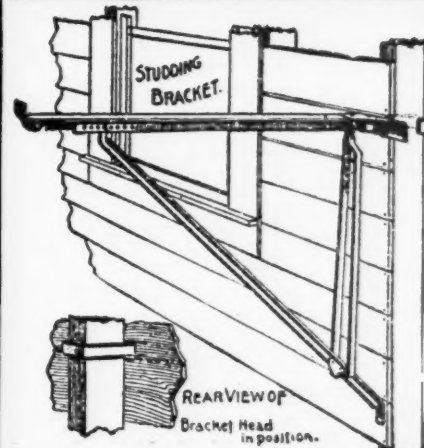
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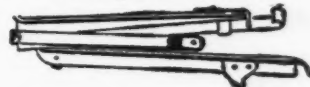
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Detroit, Mich., June 14.

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